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ORIGINAL ARTICLES.

HEPATIC ABSCESS AND THE AMŒBA COLI.[1]

BY JOSEPH EICHBERG, M.D.,
PHYSICIAN TO THE CINCINNATI HOSPITAL.

OUR knowledge of the direct, essential causes of disease is all too limited. The past few years have witnessed some important additions to this obscure department of medicine, and more promise to follow. We are indebted to the microscope for many of the more recent acquisitions in this field, of which the case I herewith report is an illustration. The case is of interest, because the results of investigations upon the relation of the amœba coli to abscess of the liver are not as yet sufficiently appreciated by the body of the profession; and all additional testimony can but serve the purpose of carrying conviction more deeply to doubting minds. The patient entered my service at the Cincinnati Hospital, and I am indebted for the following complete notes to Drs. Morris and Landis, internes of the medical and surgical wards respectively:

H. B., thirty-five years old, colored, a laborer, of good physique, married; was admitted to the medical ward of the Cincinnati Hospital December 13, 1890. His father is said to have died of phthisis; a brother of pneumonia. The patient had had pertussis, measles, rheumatism, malaria, orchitis and chancre.

In June the patient was suddenly seized with pain at the base of the right lung. The appetite was impaired; he had night-sweats; he was extremely debilitated. In a short time he began to improve, but was not able to resume work, and steadily lost strength and flesh. There was also cough, that steadily grew worse, with free, bloody, muco-purulent expectoration. Two days before admission, shortness of breath became decided, cough became much worse, with pain in the right side. The man had been confined to bed for two months.

On admission to the hospital sleep was disturbed, and there was still some pain in the right side. The cough was frequent, the expectoration muco-purulent and bloody. The appetite was poor; the bowels regular. The pulse was 108; the temperature 99°. There was edema of the feet and lower extremities. Micturition was normal. The urine was of amber color, of acid reaction, of a specific gravity of 1030, and contained neither albumin nor sugar. The patient was very well developed and well nourished. The tongue was pale, the throat normal. The chest was well formed; the respiratory movements were limited upon the right side. Over the liver the intercostal spaces were obliterated, with bulging of the chest; the respiratory movements were accelerated (30 per minute); expiration was prolonged; there was some supra-clavicular retraction; there was percussion dulness over the whole right lung anteriorly, and slight dulness posteriorly, increasing from above downward; at the apex the resonance was fairly good; at the base there was flatness. There was dulness on percussion over the lower lobe of the left lung, anteriorly and posteriorly. On auscultation of the right lung, tubular breathing, with moist râles, was heard in the upper lobe, with gradual diminution of the sounds downward, until at the base the sounds were distant and blowing in character. In the left lung, moist râles and tubular breathing were heard in the lower lobe; sonorous râles in the upper lobe. Vocal fremitus was markedly diminished over the lower lobe of the right lung, and increased over the remaining portion of the right lung and over the left lung. The apex-beat was seen in its normal position; no abnormality of the heart was detected. The abdomen was somewhat distended; the increase in size had been noticed for a few days. No abnormality in the abdominal viscera was detected; a moderate collection of ascitic fluid was present. The feet and legs were edematous, pitting on pressure. The swelling had appeared at intervals during the previous two months. The existing swelling had been present for a week. The patient had external hemorrhoids.

A diagnosis of ph hisis, lobular pneumonia and pleurisy, with serous or purulent effusion, was made.

Despite energetic treatment with whiskey, ammonium carbonate, morphine, phenacetin, iodoform suppositories, Hope's mixture, paregoric and aspiration, the patient failed to improve; cough and hemoptysis persisted; inability to sleep was troublesome, and diarrhea set in.

On December 20th Dr. P. S. Conner saw the patient in consultation, and consented to perform paracentesis, and to have the patient transferred to his service. With his permission I append the remaining notes, made during the patient's stay in the surgical wards: An incision two inches long was made in and parallel with the seventh intercostal space in the axillary line. A quantity of bloody fluid was evacuated, apparently containing pus, but unlike the material evacuated in the orginal aspiration. On passing the finger into the chest extensive and firm adhesions were found, apparently separating this fluid from more above. An incision, one inch in length, was accordingly made in the sixth intercostal space, and a large quantity of thick, greenish pus and bloody

[1] Read before the Cincinnati Medical Society, February 3, 1891.

fluid of disagreeable odor was evacuated. A large drainage-tube was introduced into the upper incision, the lower was drained with an iodoform-gauze stuffing, and dressed with bichloride gauze and cotton. The patient felt greatly relieved by the operation, and had much less difficulty in breathing. Cough and diarrhea, however, continued.

On December 30th the appearance of the patient was bad; emaciation was marked; a peculiar odor emanated from the body, and could be noticed at a distance of ten or twelve feet. On the following day the patient became much worse, sank rapidly, and died.

Temperature, pulse and respiration pursued the following course:

December 14. A.M., temperature, 99.6°; pulse, 120. P.M., temperature, 103.4°; pulse, 132; respiration, 36.

15th. A.M., temperature, 100°; pulse, 120; respiration, 36. P.M, temperature, 100.8°; pulse, 120; respiration, 36.

16th. A.M., temperature, 99.4°; pulse, 120; respiration, 30. P.M., temperature, 99; pulse, 126; respiration, 30.

17th. A.M., temperature, 100.6°; pulse, 120. P.M., temperature, 103; pulse, 126.

18th. A.M., temperature, 101.2°; pulse, 120. P.M., temperature, 102.8°; pulse, 126.

19th. A.M., temperature, 100.4°; pulse, 120. P.M., temperature, 100.6°; pulse, 120.

20th. A.M., temperature, 100°; pulse, 120. P.M., temperature, 99.4°; pulse, 120.

21st. A.M, temperature, 98.8°; pulse, 120; respiration, 30. P.M., temperature, 100.8°; pulse, 120; respiration, 32.

22d. A.M., temperature, 99.8°; pulse, 122; respiration, 28. P.M., temperature, 101.2°; pulse, 128; respiration, 32.

30th. P.M., temperature, 98.4°; pulse, 116.

The post-mortem examination was made twelve hours after death by Dr. F. Kebler, pathologist: Man, apparently thirty years of age. Post-mortem rigidity well marked. On right side of chest, in axillary line in fifth intercostal space is an incised wound several inches long, from which protrudes a drainage-tube. The right pleural cavity was found to contain about one pint of blood-stained pus. Numerous recent adhesions bound the lung to the chest-wall and to the diaphragm. On the left side were some old pleural adhesions. In the lower lobe of the right lung was found a cavity large enough to admit the closed fist. By a perforation of the diaphragm the excavation communicated with a large abscess-cavity in the liver. Both contained a considerable quantity of blood-stained pus. In the right lobe of the liver posteriorly was found a large-sized pus-cavity, communicating with the pleural cavity by means of the perforation in the diaphragm noted. Surrounding the main abscess-cavity were numerous smaller ones, varying in size from a small nut to a pigeon's egg. The pus in all these cavities was more or less blood-stained. Kidneys, stomach, spleen and small intestines were all normal. The large intestines contained a small number of old dysenteric ulcers.

Until the moment of aspiration I was under the impression that we were dealing with a case of phthisis that had given rise to a sacculated exudation in the right pleural cavity, the boundaries of the fluid-accumulation being clearly traceable upon physical examination by the dulness, absence of breath-sounds and diminished vocal resonance. The muco-purulent character of the expectoration, tinged, as it was, with blood, seemed confirmatory of such a diagnosis; and I was prepared, from the almost rusty character of some of the sputa that I had seen, to find an acute lobar pneumonia, developed in the course of what I firmly believed to have been an advancing phthisical destruction of the lung. The fever, the night-sweats, the loss of strength and flesh, accorded well with such an opinion; nor was there aught in the physical signs to direct attention to the liver as in any way involved in the difficulty.

Posteriorly, the pulmonary resonance over the right side was pretty clear, and extended downward almost to the usual level. Anteriorly, the lower border of the liver-dulness coincided with the lower costal margin; the upper border in the anterior axillary line was in the sixth intercostal space; anteriorly, the hepatic dulness passed insensibly into that due to the exudation. Moreover, aside from pain in the lower portion of the chest, early in the course of his illness, nothing in the patient's history suggested hepatic trouble. The patient denied having had anything like a dysenteric attack, but I am now inclined to believe that much obscurity in his history was due to ignorance or to mental hebetude.

The case was aspirated in the presence of the class of students at the hospital, who had been informed of the possibly purulent character of the fluid. As soon as the chamber of the aspirator began to fill, all doubt as to the nature of the case was removed. The thick, almost gelatinous, greenish-red exudation, with occasional streaks of creamy pus, alternating with a fluid of the color of anchovy sauce, could come from only one organ in the body. Clinicians and pathologists are familiar with the characteristics of this pus, which, when allowed to stand for a short time, becomes more viscid, presents a sort of glossy, shining surface, and at times almost seems to undergo a sort of coagulation, solidifying into a semi-solid mass; it rarely shows any trace of bile-coloring matter or of bile-salts. It is the fluid found originally only in hepatic abscess, so that its presence in other localities is in itself proof-positive not only of abscess of the liver, but of communication between the abscess and the accidental cavity in which this pus may be encountered.

There was no hesitation, therefore, in declaring that the case was not one of phthisis, but of hepatic abscess, perforating the diaphragm, with subsequent

perforation of the lung. Hence the peculiar character of the expectoration, the sweats, the fever and the prostration; hence the early pain in the right side and the dyspnea; hence, too, the circumscribed sacculated cavity in the pleura, with dulness on percussion, passing insensibly into the liver-dulness. The abscess evidently was situated in the right lobe, near the upper convexity, so that it had found less resistance in advancing upward than in a gradual invasion of the liver substance. The absence of any enlargement of the liver sustained this view. It is interesting to note the change in the sputum from purulent to clear white, frothy mucus, immediately after the aspiration; only again to become purulent after a brief interval. The pus-cavity filled rapidly, and surgical intervention was distinctly indicated.

As shown by the autopsy, the operation came too late to be of service, since multiple abscesses had formed in the liver, possibly by infection from the original source, more probably by local infection from the large primary abscess. The arrangement of the secondary or smaller abscesses in a somewhat concentric manner around the larger cavity, their tolerably uniform size, and the appearance of smaller, almost microscopic, pus-collections on their confines, would argue rather for a local than a distant source of infection. This should obviously incite to early evacuation, with free drainage, whenever abscess of the liver is recognized; nor should incision be even tentatively delayed by aspiration.

The conviction that the case was one of phthisis, of rather unusual distribution, seemingly affecting the bases of both lungs, caused us to neglect the microscopical examination of the sputum; so certain were we, that the usual examination for bacilli tuberculosis was not even asked for. However, upon recognizing the true character of the case, examination of the stools and pus was repeatedly made, with the uniform result of showing us, present in large numbers, the amœba coli, the organisms the association of which with tropical dysentery and hepatic abscess is, by some clinicians, now considered causal.

My attention had been particularly directed to the article upon the amœba coli in the *Bulletin of the Johns Hopkins University*, from the able pen of Professor Osler. Sketching with characteristic ability and clearness the rather meager literature of the subject, the article embodies the full report of a case of hepatic abscess, characterized by the presence of amœba coli in the stools and in the pus. A subsequent communication in the same journal, by Professor Welch, pays special attention to the appearance of these organisms, which Leuckart classified as belonging to the rhizopods. A third article, also in the *Bulletin*, by Dr. Simon, reports a case in which the diagnosis of hepatic abscess perforating the lung was correctly made from the recognition of the amœba in the sputum.

While highly flattering to the zeal of the medical staff of the Johns Hopkins Hospital, it is singular that this should embrace, so far as known to me, all of the American medical literature bearing upon the point in question.

There is little, if anything, to add to the lucid and succinct description of Professor Osler. The specimens of amœba observed by myself and by others of the medical staff of the Cincinnati Hospital conformed accurately to the account he has given, part of which I take the liberty of reproducing here. Some of the amœbæ were considerably larger in size than those figured by him, though the average would not exceed his estimate. The greatest variation was observed in the rate of movement, some travelling across the field with almost lightning-like rapidity, others being very sluggish in sending out the knob-like processes that seemed to precede each change of place. The following is the reference alluded to:[1]

"*Description of the Amœbæ.*—(a) From the liver: The size ranged from 10μ to 20μ, which appears to be somewhat greater than that indicated by Kartulis. When at rest the outline was usually circular, occasionally ovoid; but when in motion they presented, as shown in the figures, the extremely irregular contour of moving amœboid bodies. The protoplasm could be distinctly differentiated into a translucent homogeneous ectosarc, or motile portion, and a granular endosarc containing the nucleus, vacuoles and granules. The hyaline ectosarc was, as a rule, very distinct, and in many examples the granular protoplasm of the interior was surrounded by it as a distinct rim. Occasionally a form was seen in which this portion was much less developed, and the greater part of the organism seemed composed of granular substance. Within the endosarc the vacuoles constituted the most striking feature. Sometimes the interior substance appeared to be made up of a series of closely set, clear vesicles of pretty uniform size. As a rule, one or two larger vacuoles were present, the edges of which were not infrequently surrounded by fine dark granules. I never saw a true contractile vesicle which displayed rhythmical pulsations, but the larger vacuoles underwent at times changes in size. The nucleus was plain enough in some examples; in others very difficult or impossible to detect. It was usually pale, ovoid or rounded in outline, and with a very delicate contour. No distinct nucleus was seen, though there were sometimes coarser granules which possibly represented it.

[1] The Johns Hopkins Hospital Bulletin, vol. i., No. 5.

"When once recognized there was not the slightest difficulty in distinguishing these bodies, even when at rest, from the pus-elements, not only by their size but by the entirely different appearance of the protoplasm.

"The movements, however, constitute their most interesting and distinctive features. From any portion of the surface a rounded hemispherical knob would project, and with a somewhat rapid movement the process extended, and the granules in the interior streamed toward it. As in the pond-amœbæ, the clear ectosarc seemed to initiate and play the important part in the movements. Though sometimes slow, many examples were found in which the alterations in contour and the change in locality were quite as striking as in the large, active forms of pond-amœbæ. The processes were always rounded, never angular or linear, as in white blood-corpuscles. Motile forms were found each day in the pus during life. They seemed at times more active apparently than at others, and the movements went on at the average laboratory temperature, but seemed increased by heat. They continued active for hours at a time. Twice the movements were observed to continue in the same organism for more than ten hours."

Beside personal observation, I have the following reports, kindly submitted by Dr. J. C. Oliver and Dr. C. S. Evans, curators of the pathological department:

December 17, 1890.—A specimen of pus, obtained by aspiration, was examined for liver-cells; large multinuclear cells were found containing some pigment. Upon the same day, chemical examination of the pus showed no trace of bile-pigment.

19th.—A stool of the patient was examined for amœba coli, which were found in moderate number and in active motion.

20th (date of operation).—Pus obtained from the chest-cavity was found to contain amœbæ in large numbers. The first field showed eight of these organisms. Elastic fibers of the lung were present in considerable quantity.

27th.—Pus from the wound showed amœbæ in considerable number, actively moving, and some elastic lung-fiber.

31st.—Pus from the wound contained active amœbæ, also lung-fiber and biliary coloring matter.

January 1, 1891.—Post-mortem specimens of pus from multiple abscesses showed amœbæ to be uniformly present. Upon staining, *no bacteria* were found.

Inoculation-experiments with sterilized agar were made by Dr. Evans. An attempt was made to cultivate the amœba in sterilized meat-broth. The experiment was also made with the hanging-drop; but these attempts proved unsuccessful, not yielding any growth of the amœba. As suggested by Dr. Evans, it is possible that future efforts in this direction would be more fruitful if sterilized gutter or sewer, or stagnant water be employed as culture media.

We have, then, a case of hepatic abscess, connected with dysentery, and amœbæ constantly present in the fecal discharges and in pus from the liver. Is the amœba the cause of both? More extensive clinical experience can alone determine this point with precision; what evidence we have is wholly confirmatory; and it remains to be seen if cases of dysentery ever occur independently of all association with the amœba. The observations of Professor Koch and his cholera commission, as summarized by Kartulis, show the constant association of the amœba with tropical dysentery, and its presence in the wall of the intestinal ulcers, as well as in the contents of the gut.

Whether or not tropical dysentery differs in this respect from the sporadic variety occurring in temperate climates remains to be seen. In our case there was no history of residence in warm latitudes, although the patient's statements were not reliable. Accepting for the moment the dependence of dysentery upon the amœba coli, it is easy to understand how, by virtue of its great mobility, this organism should be enabled to penetrate the delicate capillary wall, or to gain entrance into the circulation through vessels opened by the ulcerative process in the intestine. Once in the circulation, its transmission to the liver through the portal circuit follows almost of necessity. Its arrest in the substance of the gland ensues, partly by reason of its own considerable size, as compared with the caliber of the vessels, partly because of the great complexity of the capillary network that would render futile a momentary elongation, made to conform to the outline of a single loop. Retained thus in the liver tissues it constitutes an irritant sufficiently intense to produce a low grade of suppuration, with more or less severe constitutional symptoms of sepsis. Judging from the number found in the pus, the multiplication of the amœbæ in the liver tissues must be comparatively slow. Secondary infection from the original abscess takes place by penetration of the pyogenic walls in consequence of the amœboid movements, and the arrest of stray amœbæ in the immediate vicinity.

The causal relation of the amœba to dysentery would also serve to explain some clinical facts in the history of that disease.[1] The first of these is the prevalence of dysentery in warm latitudes, and during the hot season of the year in temperate climates. The factor of temperature has the greatest possible bearing, as we know, upon the multiplication of all low organisms, whether animal or vegetable. (The warming of the slide bearing the

[1] See also Stengel, "Acute Dysentery and the Amœba Coli." THE MEDICAL NEWS, Nov. 15, 1890.—ED. NEWS.

amœbæ was always attended with greater activity of movement.)

Whatever the native culture-ground of the amœba (and the most natural inference would point to some water contaminated by an abundance of organic material), it is evident that high temperature, by increasing the number of amœbæ, would by so much favor their entrance into the body, and thus increase the morbidity from this cause. A second clinical fact, explicable upon the same hypothesis, is the undoubted curative value of simple ice-water injections, or of cold injections of boric fluid. In the former instance we are dealing solely with the manifest influence of temperature. As warmth favors a multiplication of organisms of a low order, cold either destroys their vitality entirely or suspends it sufficiently to enable the bowel to throw off, with the enema, the organisms, the presence of which is so deleterious. Were the enema of service merely by its cleansing effect, there would seem to be an advantage in the use of warm rather than cold fluids; yet clinical experience must assign the greater value to water of almost icy temperature. The addition of boric acid, as well as of other weak antiseptic solutions, would increase the efficacy by supplementing the destructive power of low temperature.

The evidence of causal connection of the amœba coli with dysentery and with hepatic abscess of dysenteric origin, thus far presented in medical literature, is not sufficient for definite statements; it must be considered as strongly suggestive rather than as conclusive; and it is with the view of stimulating further research upon a subject so interesting that I have ventured to present this history and these comments.

P. S.—An interesting point has been brought out since the foregoing was written. A patient, supposed to be suffering from some hepatic disorder, was admitted to the medical service of the hospital. Physical examination showed the presence of an abscess below the costal margin. Some pus was withdrawn by aspiration. No amœbæ were found. Subsequently paracentesis was performed, and it was seen that the abscess was sub-peritoneal, not connected with the liver or any abdominal viscus. In two cases of hepatic abscess, not occurring in my service, the amœba coli has been observed in the discharges from the abscess-cavity.

COMPARATIVE DATA IN THE TREATMENT OF UTERINE TUMORS.

BY MARIE B. WERNER, M.D.,
OF PHILADELPHIA.

THE safest method of treating uterine tumors has of late been a question that has aroused the most earnest debates, especially between surgeons and electricians. Those who have given the subject careful attention will have a little patience with me if I presume to add to the conclusions of others my own, based as they are on more than five years of careful study of two methods that are stern antagonists in the field.

Electricity has claimed the attention of many, and now, after some years of earnest trial, one can decide as to either its value or harm to the patient. Many so-called cures have been ascribed to its use, but from personal experience I feel sure that some important factors were lost sight of when such assertions were made. Patients having untold confidence in their physicians are often more than willing to keep pace with the desire to feel benefited, and should the doctor also be anxious to place faith in the method, reasoning from cause to effect will often be lost sight of on the pinnacle of faith.

There are certain points to be considered in the treatment of uterine tumors by electricity. The most important is *correct diagnosis*. In carefully reading Keith's report of 106 cases treated by electricity, one is impressed with the fact that cases of subinvolution, metritis and pelvic inflammation are classed alike under the head of uterine tumors.

Changes in the tumor are frequently encountered that must be considered—I allude to the suppurative, cystic, edematous and sarcomatous varieties; adding to this the fact that the appendages are more often diseased than not, it certainly becomes a matter of the most delicate diagnostic skill to make it safe for the patient to undergo treatment by electricity. Abdominal surgeons, no matter how experienced, often hesitate to name a painful mass or tumor before seeing it.

That the general health is sometimes improved after treatment with electricity has been demonstrated by the statistics of some of those who have made a careful study of the utility of this agent. Thus, Dr. John Homans,[1] of Boston, reports that of 35 cases treated by electricity, the general health was improved in 15, was made worse in 2, was improved and afterward made worse in 2, was unaltered in 11, and 5 were not heard from. Among those that were made worse he must include one case of death reported.

When we consider that the careful physician will attend to the general health of his patient, in conjunction with electrical treatment, we can readily understand the improvement, as well as that often proper hygienic care might have achieved it unaided. In referring again to Dr. Homan's conclusions, we find that profuse hemorrhage was diminished to within normal or bearable limits in 9, increased in 6, and unchanged in 9. The meno-

[1] Boston Medical and Surgical Journal, March 12 and 19, 1891.

pause occurred in a few cases after treatment was begun. If it is admitted that hemorrhage is checked by the application of the positive pole, and that the hemostatic effects are due to a cauterant action, many doubts and fears arise as to the ultimate results for the patient, for cicatricial tissue belongs, as we all know, to the lowly organized structures.

Dr. Franklin Townsend[1] reports 4 cases of uterine fibroids in his series of 17 cases treated by electricity. Such was his experience that he was satisfied to resume his surgical work, feeling that he could thereby do greater justice to his patients.

Those advising electrical treatment consider that a patient placing herself under the surgeon's care is passing through an operative shadow of death, is mutilated, and may look forward to a possible hernial weakness. If one studies some of the cases reported by the various advocates of electricity—for instance those contained in Keith's report of 106 cases of uterine tumors treated by electrity, Cases IV. and VIII. show at once that the patients not only passed through the shadow, but actually succumbed. Many others suffered from attacks of peritonitis; and all so-called cures seem doubtful to the careful student, since the presence of the tumor and a fluctuating condition of health makes one think that the sword of Damocles is still hanging over their heads.

Rutherfoord's[2] case shows how the patient was passing beneath the shadow of death for upward of five months. Here suppuration of the tumor and subsequent septic poisoning undoubtedly caused the train of symptoms that followed three intra-uterine treatments with the positive pole. In a recent discussion of Dr. John Homans' paper, Dr. J. R. Chadwick[3] gives an account of 11 cases treated by him with electricity for six months. In no case did the fibroids diminish in size during or subsequent to the treatment; in 3 cases metro-peritonitis was excited; one of these ended fatally on the sixth day; in one case general septicæmia set in a day after the sixth treatment, with a fatal termination from pulmonary embolism twenty-six days later. These results were the occasion of his abandonment of the use of electricity in gynecological practice.

Dr. Anna M. Fullerton[4] reports 9 consecutive cases of abdominal section, in which the harmful effects of previous electrical applications in cases of salpingitis and allied conditions were plainly demonstrated. Adding to this the fact that in cases of uterine tumors most of the appendages are either primarily or secondarily diseased, the danger of electrical treatment becomes at once apparent; it is certainly often one of the causes of localized peritonitis. Apostoli's directions prove that he has had reason to recognize this danger, for he says: "Only apply a dose that the uterus can bear. Never be rough or take the patient by surprise. Reach the maximum dose gradually and diminish it in the same manner." He makes another important statement: "Ovarian or tubal intolerance depending upon diseased appendages will demand an increased precaution, and forbid all applications of high intensity." Adding these cautions to the experience of the abdominal surgeon should be sufficient to cause a halt in the application of electricity in gynecology, and one should ponder well on the question of mutilation. In connection with this subject, I will briefly cite a case from my practice:

In March, 1886, I was consulted by a patient for painful, irregular, scanty menstruation. She was married, had never conceived, and was anxious to have children. Examination revealed two fibrous masses in the posterior wall of the uterus. There was a history of gonorrhœal infection. I used the continued current (negative pole). For five weeks the patient appeared to do well, and we were both encouraged; after that, however, she developed chronic peritonitis which finally became septic.

This was verified by a subsequent section, performed as a last resort to save life, in which Dr. Joseph Price assisted me.

This was sufficient to make me fully realize the dangers of electrolysis. I had seen Dr. Apostoli use it, and had followed his directions closely. To my mind there is less mutilation in removing diseased organs than in subjecting the patient to the dangers of sepsis. Again, when multiple fibroids and pregnancy coexist, the risk for the patient is increased, since it may become necessary to perform a Porro-Cæsarean to effect delivery.

Ventral herniæ are extremely rare when the necessary care is given to include enough fascia and muscle in the sutures, and the wound is accurately closed, with attention to sufficient rest in bed after operation, and the use of abdominal support.

Having considered the electrical question, we will turn to the surgical. There are two principal methods that have been more or less successful in the hands of our surgeons—removal of the appendages and hysterectomy. Myomectomy still presents many obstacles to the permanent recovery of the patient, since as long as some uterine tissue remains the enucleation of one or more tumors does not preclude the possibility of growth of others. Another important point for consideration is the condition of the appendages. This point can best be illustrated by the conditions found in a patient upon whom I had the privilege of seeing Dr. Joseph Price

[1] Transactions of the Obstetrical and Gynecological Society, September, 1890.

[2] Proceedings of the British Gynecological Society, October, 1888, p. 323.

[3] Boston Medical and Surgical Journal, March 12, 1891.

[4] Medical and Surgical Reporter, August 16, 1890.

operate. A multinodular fibro-myoma had become pedunculated; myomectomy would have been an easy matter, but the entire uterus and appendages having been removed, a subsequent examination of the specimen showed three small fibroids in the uterine walls, while the appendages had been bound down by dense adhesions and were diseased, amply proving that the patient's condition would doubtless have been made worse if myomectomy had been performed, since the source of greatest pain, adherent and inflamed appendages, would have been left, as well as the possibility of subsequent development of the three remaining nodules.

Leopold[1] makes a note of five cases in which subsequently to operation there was a development of other growths—in one case after removal of the appendages, and in four after enucleation—necessitating secondary operation. One of these cases ended fatally after hysterectomy—not, however, before having had a submucous growth removed after the myomectomy. These cases certainly go far to prove that myomectomy is not so safe as to ultimate results as is removal of the appendages or hysterectomy.

In which cases shall the one or the other be given the preference? Lawson Tait, with his vast experience, has given us his conclusions. These hold good for most cases. His investigations have led him to believe that the multinodular myoma is essentially a disease of menstruation; hence his advice is to remove the appendages in such cases, if possible. If this is done, and the patient has not yet reached the age of forty, the tumors generally disappear entirely. The edematous myoma, however, seems unaffected by the menopause, Tait having watched the progressive growth of one after the menopause until the patient was sixty-three years old, when he successfully removed it by hysterectomy. It is interesting to note further that Mr. Tait has performed hysterectomy for edematous myomata in the case of patients between the years of eighteen and thirty-one, feeling certain that removal of the appendages may arrest menstruation, but not the growth of the tumors.

The youngest patient in the case of whom he performed hysterectomy for multinodular myoma was thirty-seven years old, and the oldest fifty-two. This seems in a great measure to verify his statements as quoted.

In the early stages of myomatous growths, menorrhagia is one of the most troublesome symptoms. When there is pressure upon the bladder or pelvic structures, or if the appendages are inflamed or diseased, pain becomes an additional trial to the patient. Dr. Joseph Price, whose large experience enables him to make an estimate of these complications, states that the appendages are diseased in 95 per cent. of cases.

To sum up: The most rational treatment, based on scientific research, is to remove the appendages when the symptoms produced by the growth become unbearable to the patient, or if there is reason to suppose that the appendages are diseased from any cause. In the case of the multinodular myoma, this promises a cure, provided the operator is careful to tie close to the cornua of the uterus and to remove all ovarian stroma, together with all sources of infection or irritation, and has given careful attention to the minutest details of the toilet of the peritoneum, thus reducing possible secondary complications to a minimum.

There is, however, one other point to be considered, and, in order to illustrate it, I will briefly cite one of my own cases:

In October, 1889, I removed adherent and diseased appendages from an extremely anemic patient with a multinodular myoma. The usual metrorrhagia followed forty-eight hours after the operation, and lasted five days. Four weeks later the flow again came on, and in spite of ergot and hot douches continued fourteen days. Six weeks after the operation I dilated the uterus, and found a submucous growth the size of a hen's egg, removed it, and the hemorrhage ceased. In the following July (eight months later) another hemorrhage, dependent upon a second submucous growth, as large as a pigeon's egg, was checked by removal of the tumor. The patient has since had no return of the hemorrhage, and enjoys good health. The point I desire to make here is, that the patient was subjected to less risk by the use of the dilator and écraseur after the removal of the diseased appendages than had this method of procedure been the first step in her treatment. Dr. Bantock supports this view in an argument reported in the *Proceedings of the British Gynecological Society*, October, 1888.

Tait condemns any kind of uterine dilatation or medication when the appendages are inflamed or adherent. Leopold, on the other hand, advises exploration of the uterine cavity to determine the possible presence of submucous growths *before* removal of the appendages. The possible dangers in following this advice are clear to those that have witnessed attacks of pelvic inflammation follow intra-uterine manipulations, when there was reason to suppose the appendages were diseased.

In looking over the statistics upon the removal of uterine appendages by skilled operators, we find much to encourage us.

In his first series of 1000 sections, Tait[1] records

[1] Archiv für Gynäkologie, Band xxxviii. Heft 1.

[1] "Tait's First Thousand," British Medical Journal, 1885. "Tait's Second Thousand," British Medical Journal, November, 1888.

99 cases of removal of the uterine appendages, with 7 deaths, or a mortality of 7 per cent.; this is improved in the report of his second 1000—148 cases, with 3 deaths, or a percentage of 2.03.

Leopold[1] has collected the cases of ten operators (all German except Tait), giving a summary of 744 cases, with 60 deaths, or a mortality of 8 per cent. Leopold has credited Tait with 393 cases, while he has actually operated in but 247; deducting these, it leaves a mortality of 11.4 per cent. for the German operators.

The fact that removal of the uterine appendages does not always arrest the growth of the tumor, or that at other times hemorrhage remains a troublesome symptom, has been explained, and shows that accurate diagnosis at skilled hands, combined with good judgment, will reduce the complications to a minimum.

This brings us to the consideration of hysterectomy, an operation that even a few years ago was regarded as one of the gravest. Many methods have been devised by numerous operators, for the disposal of the stump, each striving to reduce the rate of mortality. The necessity for the operation is sometimes an unexpected sequence in cases in which it is impossible to remove the appendages, or when an edematous myoma is present. For these reasons it becomes an interesting question to decide what method promises the best results.

In order to arrive at some definite conclusions in this matter, I sent a circular letter to such operators as were known to me. I shall first give the results of those who have performed more than ten hysterectomies:

Dr. Joseph Price, 53 cases, 3 deaths, (5.6 per cent.), extra-peritoneal; Dr. John Homans, 45 cases, 8 deaths (17.7 per cent.), 39 extra-peritoneal, 5 intra-peritoneal; Dr. P. F. Mundé, 12 cases, 4 deaths (33 per cent.), extra-peritoneal; Dr. M. D. Mann, 12 cases, 1 death (8.3 per cent.), extra-peritoneal; Dr. H. T. Byford, 21 cases, 4 deaths (19 per cent.), vaginal fixation, abdominal fixation. The aggregate of fifteeen operators who have performed less than ten hysterectomies by the extra-peritoneal method includes 46 cases, with 10 deaths, or a mortality of 21.7 per cent. By the intra-peritoneal method five operators operated in 15 cases, with 5 deaths, a mortality of 33.3 per cent. Considering the number of operators, this latter compares favorably with the record of Leopold's 56 cases: 22 cases, with 5 deaths (22.7 per cent.), intra-peritoneal; 34 cases, with 7 deaths (20 per cent.), extra-peritoneal. The mortality of hysterectomy in England and America, as represented by the labors of two leading surgeons, stands thus: In his last 1000 cases, Lawson Tait had 88 of hysterectomy, with 10 deaths, a mortality of 11.3 per cent., and a series of 31 consecutive recoveries. Joseph Price has had 53 cases, with 3 deaths, a mortality of 5.6 per cent., and a series of 43 consecutive recoveries.

The improvement in the last few years is quite manifest when we refer to Bigelow's[1] statistics that show that the mortality of operations performed by the extra-peritoneal method was, during the preceding five years (from 1879 to 1883 inclusive), 36.54 per cent., and that during the years from 1881 to 1883 the mortality was reduced to 26 per cent. This excludes all cases in which only portions of the uterus were removed, and includes all those in which the uterine tumor and appendages were removed.

Bantock's success has increased in direct ratio with his improvement and skill in the perfection of the extra-peritoneal method, his few cases of intra-peritoneal treatment having ended disastrously. In his paper on the "Treatment of the Pedicle in Hysterectomy,"[2] he reports 5 cases treated intra-peritoneally, with 4 deaths and 1 recovery; while he reports 57 cases treated by the extra-peritoneal method, with 45 recoveries and 12 deaths; and, in another series, 13 cases with no death.

Martin has lately abandoned the intra-peritoneal method, feeling that there is not sufficient security against secondary hemorrhage, the discharge of suture-threads from the stump and the liability to septic infection from the cervical canal often retarding recovery. He has performed 135 supra-vaginal amputations of the uterus, with 46 deaths, and has now concluded to remove the cervix with the uterus, thus overcoming the source of danger.[3]

Dr. H. T. Byford has endeavored, and it seems successfully, to retain the cervix, and yet remove it from the pelvic cavity by his method of vaginal fixation, and at the same time retaining that which, as he ably expresses it, "is the keystone of the pelvic roof structure." He reports 14 cases treated by this method, with 1 death.

Dr. H. A. Kelly[4] sutures the face of the stump as Schröder recommends, but suspends it in the lower angle of the wound. In a personal communication he says: "I think I know about how many cases I have had after my own method—16, with 1 death. This death was reported in my fasciculus on Gynecology, *Johns Hopkins Hospital Reports*, p. 122. You will find another death reported on p. 120, in a case in which I was unable to follow my method, as the whole uterus was involved in the tumor." The 16 cases mentioned are not all included in this hospital report, but there is a report of 6 cases, with 3 deaths;

[1] Archiv für Gynäkol., Band xxxviii, Heft 1, p. 29.

[1] American Journal of Obstetrics, 1883, p. 1274.
[2] Transactions of the American Gynecological Society, 1887.
[3] Annals of Gynecology, February, 1891.
[4] *Vide* THE MEDICAL NEWS, June 28, 1890.

probably the third death was another in which he could not follow his own method.

In summing up the results of the various methods, we find that the extra-peritoneal treatment has found greater favor, because of its safety from hemorrhage, the more rapid and certain convalescence, and, if carefully carried out, the danger of septic infection being almost *nil*.

I feel certain that, with all due respect for the surgical skill of Dr. J. Price, if he was not so extremely careful to attend to *all* the smaller details his work would not have been crowned with such remarkable success as it has been.

PROTECTION FROM DISEASE.[1]

BY WILLIAM B. CANFIELD, M.D.,
OF BALTIMORE, MD.

WHEN a physician attempts to cure disease, he simply, as far as possible, removes the cause, clears the way to recovery, and lets Nature do the rest. In many cases Nature does her work well, although not always getting due credit for warding off disease and protecting us from harm; in other cases, she succumbs to her stronger foe, disease. Those of us who live in crowded communities are surrounded by an invisible enemy, and with every breath we are liable to draw in disease in some form —and yet so many escape! We open our windows and let in what we call "fresh air," and as the sunbeam slants across the room, what myriads of dusty atoms meet our eyes! If in a quiet room we inhale at every breath this dust, what would we not breathe in the streets of dusty cities, in mines, and in mills! In the sanitary management of our cities, the danger of flying dust, with its many impurities, is rarely considered, and the dust of city streets that should be properly sprinkled and carted away is simply stirred up by the indolent sweepers and much of it is probably taken away in the clothes and breathing apparatus of the unfortunate passers-by. Such dust, when inhaled, does harm both from the impurities it may contain, and, when present in appreciable quantity, from its mechanical action and irritation.

That germs float in the air, even in the most secluded spot, the careless housewife knows to her sorrow when she leaves her jelly-glasses uncovered for a short time and finds the surface covered with a beautiful mould. Bacteriology has told us that the germs of some contagious diseases are found in the air and may be inhaled and produce disease. Thus diphtheria, glanders, measles, whooping-cough, hay-fever, pneumonia, and consumption are all undoubtedly in part due to the inhalation of dust containing the germs of these diseases. If, then, the germs of disease are in so many forms floating in the air, it is strange indeed that so many escape, especially when we consider the crowded public and private rooms, cars and other places where the sick and well meet together and breathe the same air. Fortunately for us, Nature has erected a series of barriers against such an enemy as inspired dust, and in exposing us to this danger, has given us certain means of protection that repel attacks not unusually severe.

In persons who breathe as they should, all inspired air passes first through the nostrils and is thus not only warmed to the proper temperature for the throat and lungs, but the moist walls serve as a sieve by which the air thus inhaled is as far as possible relieved of dusty impurities. This shows at once the importance of breathing with closed mouth, especially in passing from a heated to a cooler atmosphere, and of always thus breathing in an atmosphere of visible dust. The moist walls of the lining membrane of the nasal cavities fill the inspired air with moisture, making it more agreeable to the throat and lungs.

The nasal passage in almost every animal deviates from a straight channel, and this is according to the needs of the animal. In man, who is upright and far from the ground, the passage is only slightly curved and may almost be considered rudimentary in its development. In birds, which fly far above the earth, the nasal passage is almost straight. In all quadrupeds, and especially in those that graze or seek their food on the ground, and those exposed to sudden changes of temperature, as in amphibious animals, the nasal passages are exceedingly tortuous and in a high state of development, and their extreme moisture, due to the active secretion of their lining mucous membranes, serves, as far as possible, to catch and stop the entrance of dust into the throat and lungs. This is familiar to us in the cold nose of the dog, cow, etc., and in the constant sneezing of the horse. Those who breathe abnormally, with open mouth, are much more liable than others to diseases of the throat and lungs. In spite of the outward defence we have in the nose, dust and foreign substances do occasionally get into the throat and trachea, but the latter is so very sensitive to the slightest irritation that the presence of such foreign substances excites a cough and they are quickly expelled. The minute anatomical structure of the lining membrane of the trachea is, as we know, much like the waving surface of a wheat-field. The whole surface of the trachea and larger lung-tubes is covered with ciliated epithelium the waving motion of which is from the lungs upward to the throat, and very minute particles of dust and foreign

[1] Read before the Medical and Chirurgical Faculty of Maryland at its semi-annual meeting, held at Cambridge, Md., November 12, 1890.

substances that find their way into this region are thus gradually removed. This membrane is also active during sleep, as many throat sufferers and others may have noticed from the fact of their "morning cough" on rising.

In spite of these defences which Nature has raised against her enemies, disease-germs and foreign substances find their way into the trachea and even to the ultimate ends of the finest lung-tubules. In this way disease-germs, and especially the tubercle bacilli, get into the lungs, and in those predisposed to this disease this organism easily thrives. From recent investigations in microscopical anatomy we now know that Nature does not give up even after these foreign substances and disease-germs find a place in the body. In the organism, and more particularly in the blood, there has long been known a cell or corpuscle called the white blood-corpuscle or leucocyte, and in suppuration the same cell is recognized as the pus-cell. That this cell seems almost ubiquitous in the body and that it assumes different rôles under different circumstances has also been the subject of repeated investigation. The most recent function now assigned to this cell is that of a "carrier cell," scavenger cell, or phagocyte, because its function has been learned to be that of devouring or carrying off germs and foreign substances. This was noticed in those who worked in dusty atmospheres. The dust was inhaled in such quantities that it got into the lungs, and, as it could not all be coughed up, it worked its way into the lung substance, where, by irritation, it attracted these carrier cells or scavengers, and, as far as possible, these promptly attacked the particles and carried them either to the nearest lymphatic gland, where they would be quiet and harmless, or the dust-containing cells found their way into the lungs and were coughed up. This has been repeatedly noticed in the case of coal miners, in whose expectoration large numbers of these cells were found, and in those cells bits of coal-dust could be easily recognized. In some cases in which the piece of dust was too large for one cell to devour, two or more would join together and close around it. These cells have certain movements, called amœboid, from their resemblance to the movements of the amœba, one of the lowest forms of life, and found on the surface of fresh-water ponds. These amœboid movements consist in a change of shape on the part of the cell by which it thrusts out a part on one side and draws in another part, and by thus changing its shape it surrounds the substance and assimilates it. That these cells endeavor to do their work as well as possible is shown by the fact that years after miners have ceased to work in coal mines, it has been noticed that the expectoration remained dark and a microscopical examination showed these cells to be full of bits of coal and pigment, thus proving that the carrier cells were still trying, as far as possible, to remove the foreign substances. This has been experimentally demonstrated by introducing finely divided organic substances, such as powdered cinnabar, into the tissues and lungs of an animal, and after a short time microscopically examining the tissues and glands of the animal, when these carrier cells are found loaded down with this red pigment. This is especially true of the cells in the glands.

In all these cases the rôle of the foreign substance is undoubtedly passive while the cell is active. Further study of these cells showed that they act antagonistically to pathogenic bacteria—that between these cells and the bacteria there is a struggle for existence or supremacy, and on the result of the struggle depends a condition of illness or health. These observations were first made on a disease produced by a fungus in a fresh-water crustacean, the daphnia, a "water flea." The fungus swallowed by the crustacean produces spores that pierce the intestinal wall, enter into the tissue and are at once surrounded by these phagocytes. Here a struggle takes place that results in a victory for the cells, the latter closing around these fungus spores, devouring them and finally destroying them by a process of "intra-cellular digestion." In this case the action is very simple, but in the case of other animals and man the process is not so simple.

A careful study of these bacteria, both biological and chemical, has fully proved that they exert their deleterious action not so much by their actual presence as by a poison or ptomaïne that they secrete from their minute bodies, and that each specific bacterium or bacillus has its own peculiar body-product which, in the case of pathogenic or disease-producing germs, is a poison. This then complicates the struggle between the bacteria and the body-cells. There is then an actual life-and-death struggle between cells and bacteria. Inoculation of a frog with the bacillus anthracis showed this struggle very beautifully. A study of the cells of this frog revealed them with bacilli and parts of bacilli within the cell-wall in process of digestion or disintegration.

Thus there is good reason to believe that in the presence of a contagious or infectious disease, the germs floating about, or in some way gaining access to the individual near by, find their way into the body and there a struggle takes place between them and these cells that are attacked by the invaders. Now begins a struggle for supremacy. The cells close around the attacking hosts and endeavor to destroy them and carry them off or at least to prevent the further ingress of the bacteria. If the cells are victorious, they devour the germs, carry them away and thus the individual escapes the disease.

But, if the germs increase too rapidly and, by the secretion of the poison or ptomaïne from their bodies, cause the death of the cells, then sickness results. In this case the accumulation of these carrier cells that are killed by the germs results in suppuration, for the cells of pus are but the white blood-corpuscles, leucocytes, or phagocytes, when dead. As heat increases the motion of these carrier cells and also their protective activity, the rise of temperature that precedes and accompanies suppuration has been looked upon as an attempt on the part of Nature to assist the activity of the cells and to destroy the invading bacteria.

Immunity from second attacks of certain diseases, as well as the protective influence of certain inoculations and vaccinations, has never been clearly understood, although various explanations have of late been offered. In all probability, although this is but a theory sustained by analogy, after recovery from the contagious disease, usually occurring but once, the bacteria are supposed to secrete some morbid virus that hinders their own life, just as animals produce carbonic acid which is poisonous to them, or the yeast-fermentation produces alcohol which stops the growth of this fungus. In the same way, after these attacks, the cells of the body are supposed to contain some substance that resists the second attack of those organisms. It may be that Koch's paratoloid, when injected under the skin of tuberculous patients, acts in the same way. The strength and duration of this immunity differs in individuals. Of course, the ability of these cells to struggle with bacteria is lessened in weakened individuals, and hence, for example, it is very probable that the lowered vitality caused by being chilled below the recuperating point invites an attack of pneumonia or some other disease, not from the mere chilling, but from the weakening of the strength of the cells. In hereditary diseases the predisposition plays an important rôle.

We thus see that before Nature succumbs or yields to what has been very wisely called an "attack" of a disease, she uses various means of defence—and, fortunately for us, often comes off victorious.

IS ANTISEPSIS A FAILURE?[1]

BY GEORGE ERETY SHOEMAKER, M.D.,
OUT-PATIENT SURGEON TO THE UNIVERSITY AND PRESBYTERIAN HOSPITALS.

STRANGE as it may seem, outside of a comparatively small circle of surgeons, from time to time there are heard suggestions, which occasionally appear in print, that the system of Listerism, so called, is a failure. It is not very uncommon to hear someone say that in a given case "every antiseptic precaution" was adopted, but the result was bad. The speaker would have one believe that he had done his part, and that it is the whole system that is unsatisfactory. Now it is worth while briefly to consider where the difficulty lies; and without entering upon a discussion of asepsis as opposed to antisepsis, of absence of dirt *versus* sterilization of dirt, without advocating special methods or dressings, attention may be drawn to the practical difficulties that interfere with success and lead to misunderstanding.

A few men like Mr. Lawson Tait vigorously attack the so-called theory of "Listerism," while they themselves carry out the principles underlying its success. The reputation of Mr. Tait, however, rests upon his operative work, and not upon his opinions or his explanations of his success. When, in characteristic style, he says (*British Medical Journal*, September 27, 1890, p. 728): "The tone and attitude adopted by Sir Joseph Lister, at Berlin, clearly show that the whole sad business is on its last legs;" and, again, when he refers to "his [Lister's] old dead theory," and to the new cyanide dressing as "the last phase of this astonishing craze" (p. 732), the harm that he does is not great among men who, especially in general surgery, are doing the best work. These cannot work for a day without discovering for themselves that their results are better or worse according to their microscopical and chemical cleanliness in operating. Active surgeons do not care how Mr. Tait explains his good results. He might refuse to accept the law of gravitation, if he chose, but so long as he did not violate it, so long as he refrained from walking out of windows or off precipices, his opinion of the law would matter little. Most men care little that he denies the evil potency of germs, and relies on removing decomposable material from his wounds; they remember that he deals with a peculiar membrane and its neighborhood, that he is punctiliously clean in his work, and they will permit him to attack Sir Joseph Lister personally and his impregnable principles to his heart's content—those principles meanwhile receiving the widest practical application.

The harm Mr. Tait can do is in unsettling the mind of the man who is beginning his work; and, worse than that, his writings tend to salve the consciences of those who have had no training in genuine aseptic methods, who fail consequently to carry them out, and who joyfully hail any champion who even seems to justify their indifference.

But even among a better trained class of men, does not one often see a lamentable failure to grasp the essential ideas of surgical cleanliness? There are to-day hundreds that apparently persuade themselves that mopping a 1:20 carbolic acid, or 1:1000

[1] Read by title before the Section of Obstetrics and Diseases of Women, American Medical Association, May, 1891.

"bichloride" solution rapidly about a wound-area constitutes, as the phrase goes, using "every antiseptic precaution." There are men who will use chemicals on a septic patient and not change infected bedding. There are men who will go to an operation with the joints of their scissors, the locks and serrations of their hemostatic forceps, the eyes of their needles, choked with dried blood, or worse material, from the last operation. They never boil an instrument; their conscience is satisfied with the carbolic acid in the instrument-pan. Some men wash their hands no better before an operation than before dinner. When an instrument or a sponge drops to the floor they may rapidly rinse it and use it again. There are other men who have trained nurses, sterilized dressings, and boiled instruments, but who, after they have washed for the operation, shake hands with a spectator, put a hand in a pocket, remove instruments from an old, blood-stained case, help carry a table, handle dusty bottles, or use a handkerchief—yet say they use every antiseptic precaution. These men know better. What is lacking is careful self-training and what may be called an aseptic conscience. What is wanted is a realizing sense of the difficulty of getting things clean and of keeping them so. Bichloride covers a multitude of sins when it can be used freely, but when it cannot be so used carelessness tells in abdominal surgery.

Carbolic acid solutions as practical sterilizers are a delusion and a snare. They at best work slowly. Unless too strong for comfortable or safe handling, they do little good, and they do enormous harm by quieting the conscience of the man who ought to spend more time washing his hands; yet how many times does one see them relied upon when they only cover dirt. Many text-books, especially revised editions of the older works, are written from a carbolic acid standpoint. Antisepsis is a failure when it is superficial.

In a recent case of laparotomy, referred to by the operator's permission, the stitches cut out and the wound opened, though it afterward closed by granulation. The operator had been cleanly, but the fault was traced to a nurse who had handled the silk with infected fingers.

In another case the paraphernalia were elaborate and the preparations minute. During the operation the chief assistant seized a falling ether bottle, old and very dirty; yet, without the slightest effort to cleanse the hand, it was soon in the abdominal cavity. The patient died two days later of peritonitis. It may have been a mere coincidence.

In a vaginal hysterectomy case by a very active surgeon, many proper precautions were taken to secure external asepsis, but at the close of the operation *five spectators in turn*, with unsterilized hands, examined the wound, while the operator did not follow this exposure even by a douche.

A few days ago, in a hospital, a major operation was in progress. The lecturer had dilated upon the beauties of the antiseptic method. His catgut proving defective, an ancient open box of unprepared silk was brought. An unwashed hand threw a quantity into the instrument-pan, from which a piece was taken when scarcely wet, to be immediately placed upon one of the largest arteries in the body. A weak link breaks a strong chain.

In a hospital case of my own requiring careful dissection about the face, an assistant unobserved obtained an instrument used a few minutes before in laying open a suppurating bubo. In two days the wound-area underneath the sterilized dressing was one large abscess.

In an emergency, lately, the writer asked at a drug-store whether they had antiseptic gauze. "Oh, yes." And, before a word could be said, the druggist had opened a large tin box beautifully decorated, and had unrolled a quantity for inspection. He was, of course, told that while that might have been antiseptic gauze once, it had been ruined as such by his handling—a proposition that completely failed to enter his mind. No doubt that identical roll of gauze has since been retailed (part of it had been sold already), and it is to be feared that there are physicians who would buy it measured by the yard at his counter, yet hardly realizing that as a clean dressing or packing it was utterly worthless. But why multiply instances to show that antisepsis, when neutralized by some single mistake, is a failure. Which should be blamed, the system or the application?

The war between asepsis as opposed to antisepsis is a minor issue. The great fact remains that the principles of cleanliness underlying both, though adopted theoretically throughout the world, are really carried out most imperfectly by the majority of hospital internes, nurses, and some general practitioners in town and country, and, it must be said, even by many otherwise most excellent and estimable surgeons. Let no man venture to criticise methods that he has never fairly tried; let each also bear in mind that through his lack of patient personal training, though honest, his trial may be superficial, and therefore faulty.

Then, in answer to the question, When is antisepsis or asepsis a failure? one may say: *Never*, if real; *always*, if imperfect. There is no doubt that the great principle of cleanliness in surgery, whether obtained by soap, hot water, dry heat, or chemicals, has "come to stay," and the sooner all concerned act upon that principle and ignore personal discussion, the better it will be.

3717 CHESTNUT STREET.

TWO AVOIDABLE CAUSES OF STILLBIRTHS.

BY PETER McCAHEY, M.D.,
OF PHILADELPHIA.

STATISTICS show that fetal mortality has not appreciably diminished during the past century. Now, as in 1791, the proportion of stillbirths to children born alive is as 1 to 30. Out of 750,000 children born in the United States every year, 25,000 are dead when born. This is exclusive of premature births, and the multitude of abortions, accidental and intentional.

When we reflect upon the national loss implied by these figures, and upon the anguish inflicted upon the mothers who have borne so much travail only at last to behold the inanimate bodies of their children, it would seem incumbent upon us to try to lessen this frightful mortality. To do this, the principal causes of stillbirths must be recognized. Jörg and other observers, and recently Dr. M. Richardiere (*Gazette des Hôpitaux; New York Medical Journal*, July 18, 1891), have noted that "meningeal hemorrhage constitutes one of the most frequent causes of death in the newborn," that the meninges are highly congested, that sub-pleural extravasations are frequent, and that there is no evidence of any previous inflammation.

Now, it is a curious fact that the post-mortem appearances thus noted in the large majority of stillbirths are almost identical with those found in men dead after having been subjected to high atmospheric pressure in caissons. Dr. Jaminet, the medical supervisor of the men employed at the St. Louis bridge, in his work on *The Physical Effects of Compressed Air*, states that in all the post-mortem examinations of the dead caisson employés "the brain and cord were highly congested, overcharged with blood."

Dr. A. H. Smith, of Brooklyn, who was the medical director of the men employed in the caissons during the building of the Brooklyn bridge, in his work on *The Effects of High Atmospheric Pressure, Including the Caisson Disease*, says: "The constant lesion in fatal cases of caisson disease is congestion of the brain or spinal cord. . . . This congestion may affect both the meninges and the substance of the brain and cord. Extravasations of blood, hypostatic congestion of the lungs, congestion of the abdominal viscera are also noticed."

If to these observations it be added that the fetal heart is slowed during the contraction of the uterus and that the adult pulse is slowed in the caissons, there is nothing wanting to show that the cause of death in both classes is the same—exposure to the influence of compressed air.

There is, however, another cause of fetal death during labor—the filling up of the air-passages with the residual liquor amnii, mucus and meconium. Buhl (*Year-book*, 1864, p. 415) stated that his "post-mortems of twenty-seven children, dying during or shortly after birth, demonstrated that eleven of them were destroyed by obstruction of the air-passages with meconium and mucus." It is probable that in some of these cases the meconium floating in the liquor amnii was drawn into the trachea by premature inspiratory movements, but in others it was doubtless forced through the mouth and nose by the same force that in the mother ruptures the uterus and the perineum, and disarticulates the pelvis, and in the child causes meningeal hemorrhage, cranial fractures and other severe lesions—the unrestrained force of the heated and compressed uterine air.

Both of these sources of danger to the fetus can be reduced to a minimum by the use of an intra-uterine safety-tube, first, to draw off the residual liquor amnii, so that none of it may remain to be forced into the air-passages of the child; and, secondly, to lessen the intra-uterine air-pressure, whenever it appears to threaten danger to either the mother or the child.

Previously to my employment of such a tube, I noticed that in cases in which there was apparently a great deal of residual liquor amnii, the children had "phlegm in the throat" for days and, in some cases, had a cough for weeks. In "dry labors," however, and in others, in which all the liquor amnii was apparently discharged when the membranes ruptured, the children had "no phlegm in the throat," neither were they troubled with a cough.

1413 SOUTH TENTH STREET.

CLINICAL MEMORANDUM.

TWO CASES OF PYO-PNEUMOTHORAX.

BY CASPAR W. SHARPLES, M.D.,
OF SEATTLE, WASH.

A. D., thirty-nine years old, made application for admission to the poor-farm, giving in brief this history:

He was a cook in a large hotel and subject to many sudden changes in temperature. Four months previously he began to cough. In addition there developed shortness of breath, hectic fever, night-sweats, etc., together with other phenomena of phthisis.

There was percussion flatness over the lower portion of the right lung, suddenly changing to hyper-resonance, and dulness over an area nearer the mid-sternal line, as well as posteriorly. Two weeks later the patient died. At the autopsy the pleura was found much thickened and distended with gas and fluid. The gas, as it escaped, on the application of a light refused to burn. The fluid consisted of two quarts of thick, offensive pus, as well as a large quantity of lymph at the bottom of the sac, the lung being adherent to the costal pleura by two bands. The lung was firm and compressed, expanding but little

on attempts to inflate it. As the air was forced into the lung, pus and air escaped from two of three visible openings that communicated with a large cavity. The largest opening or perforation was at the antero-inferior portion of the upper lobe and was one-half by three-quarters of a centimeter in size. A bristle introduced at this point and passed upward and backward, at a distance of five centimeters, reached the second opening, one centimeter below which, in turn, was found a third. Each of the latter was quite small, having a diameter of not more than one and a half millimeters. There were thus three distinct perforations of the lung, all communicating with one tuberculous cavity. Also noteworthy are the rapid progress of the case and the occurrence of pyo-pneumothorax in so short a period.

The second case was of a year's duration and presented nothing of special interest except the trabeculæ running through the fluid at every point. In number there were about twenty-five—some binding the costal pleura to the lung, others the diaphragmatic pleura to the lung, and still others attached to both the costal and diaphragmatic pleura, forming the bases of triangles.

The cavity had a capacity of three and a half quarts, and contained five pints of pus and lymph. In this case, as in the other, the escaping gas did not burn on the application of a light. The perforation was one centimeter in diameter and represented the extremity of a tortuous cavity passing through different parts of the lung. This cavity was at no place of large diameter.

ORIGINAL LECTURE.

VARIETIES OF CHANCRE—THE PRECORDIAL UNEASINESS OF SYPHILIS—ALOPECIA—SYPHILITIC ERUPTIONS, THEIR DIFFERENTIAL DIAGNOSIS AND TREATMENT.

Abstract of a Clinical Lecture delivered at the New York Post-Graduate Medical School.

BY ROBERT W. TAYLOR, M.D.,
PROFESSOR OF DERMATOLOGY AND SYPHILIS.

THE first patient presented to the class was a man, twenty-three years old, who four weeks before, in a fight with another man, had been bitten on the lip. The slight break in the skin did not heal, and about one week later the lip began to get worse and swell. At present there is on the upper lip a large, sharply limited ulcer, the surface of which is excoriated, distinctly elevated and papillomatous; the ulcerated portions are of a grayish color, but the margins are of a brownish tint; there is some induration, but it is not marked. In reply to the inquiry by one of the class whether the lesion was a chancroid, Dr. Taylor said: Chancroid can almost be excluded by the great rarity of chancroids of the lip, not more than forty cases of the kind being on record. Among that number was one reported by Dr. Taylor about seventeen years ago. In this case the lesion is an exuberant one, and not in any sense of an ulcerative character. A history of a bite on the lip, which instead of healing up becomes the seat of a hyperplastic growth, is always extremely indicative of syphilis. If the sore were a chancroid, the surface would be ulcerated and depressed, instead of being, as in this case, the seat of thickening and new growth. The lower lip is the more common site for chancres upon the lips. Again, this case presents marked enlargement of the cervical glands; it is a rule, to which there are few exceptions, that the glands in the immediate vicinity of the port of entry of the syphilitic virus are those that are most affected. In certain cases that have been reported as peculiar and rare for the reason that the cervical ganglia have been greatly enlarged, the initial lesion was in all probability seated on the tonsil, where it had escaped detection. Had chancres been about the tongue or tonsils, there would most probably have been such an enormous glandular enlargement as to constitute deformity. If the cervical glands only are enlarged, one would expect a lesion of the oral cavity. This patient is in the primary stage of syphilis; hence it is too early for general manifestations. Chancres of the lips are not at all uncommon; patients will frequently seek advice for a cold sore which they say will not heal. Examination in the early stages shows the sore to be doughy, although later on induration is present. Any such persistent ulceration about the lips is indicative of syphilis rather than of cancer, particularly in persons under forty years of age. The syphilitic sore will be much more rapid in progress than cancer, and it will be accompanied by early and great enlargement of the cervical glands, while in the vast majority of cases the age of the patient is in itself sufficient to exclude cancer.

The patient must first be made to understand that he is a contagious element in the community, and that he must have exclusive spoons, knives, forks, drinking-cups, tobacco-pipes, towels, and the like. The local treatment is to apply equal parts of Lassar's paste and blue ointment, as a plaster, to the lip, to be changed as often as contaminated with the secretions. Externally, mercurial ointment is early and imperatively demanded; for, in this case, it will not do to await the development of secondary symptoms. The treatment should consist of inunctions of thirty grains of the ointment once daily for six days, then to be omited for two days. The inunctions should be applied to the upper part of the body and neck until there are indications of an erythema or an eczema, for it is of the first importance that the lymphatics in this region should be both promptly and efficiently treated.

The next patient, a man, twenty-seven years old, stated that three months before, two weeks after coitus, he had noticed a sore on the penis. Examination showed in the middle of the dorsal surface of the penis a slightly indurated sore, the edges of which were covered with a scab. There was also balanitis and gonorrhea. The patient denied having previously had any eruption, but stated that during the month before he had suffered from nocturnal headaches and pains in the bones. In addition to this, he had severe pains in the chest, increased by deep breathing or upon exertion, together with pains in the submaxillary glands, aggravated by movement of the jaw.

About seventy per cent. of all chancres upon the skin of the penis are syphilitic. This patient has what is known as an ecthymatous chancre, *i. e.*, one presenting a crust surrounded by a reddish halo, and with no evidence of any activity. This lesion usually begins as a

papule or as a slightly excoriated patch. After a while the infiltrated patch becomes reddened, and a serous or sero-purulent discharge takes place and dries into a crust. This patient says that this chancre has remained for the past two months just as it is. It is an illustration of a moderately hard chancre. In what is known as the "mixed chancre," chancroidal pus is deposited upon a hard chancre, giving rise to active destruction; in other words, a chancroidal influence is superadded to the hard chancre. Dr. Taylor laid stress upon the fact that hard chancres of the skin of any part usually appeared as scaling papules or as moist papules or patches that become excoriated and to which the term ecthymatous chancre is applied.

This patient says that he has suffered from pains in the chest and a smothering sensation in the precordia; in some cases the suffering is so severe as to require the administration of opiates; yet an examination of the heart and lungs detects no morbid condition. The trouble probably arises from disturbed innervation of the celiac axis or of the cardiac plexus. At times, the pain is in character and severity not unlike that of angina pectoris. This patient has been given a mixture of diffusible stimulants with the object of excluding pains that might be due to a cardiac affection. As expected he has not derived any benefit from the medicine. A change to mercurial treatment by inunction will undoubtedly give speedy relief.

The next patient was a woman, twenty-four years old, who said that three months previously she had first noticed a small sore near the groin, which afterward became ulcerated. Examination showed an ecthymatous chancre at the inner side of the thigh, about two inches below the vulva. Chancres are also found about the hypogastrium; when found in such unusual situations they point to infection during sexual intercourse in some peculiar position. This woman was probably infected from numerous patches or condylomata on the scrotum of her consort. The eruption appeared about six weeks ago, and she suffered somewhat from nocturnal headaches; but the most striking feature of her case is the extensive and profuse alopecia, affecting not only the scalp and eyebrows, but even the legs and mons veneris. The alopecia in this case has appeared quite early; it is usually first seen in the third month of the disease, after the eruption is well developed and the patient begins to feel weak and to lose flesh. It is also usually gradual in onset, the hairs loosening and pulling out readily; the hairs, when examined, are seen to be thin and dry and show no bulbous expansion upon the ends. The scalp often looks quite dirty and more or less scurfy, although its condition may readily be overlooked. Sometimes there is a partial loss of the hair of the eyebrow; sometimes there is a splitting just over the supra-orbital notch, or the hair falls out leaving jagged spots, and bearing some resemblance to alopecia areata. The papular, pustular, or ulcerative lesions about the head lead of course to more or less loss of hair. As alopecia may follow any long-continued adynamic disease, the history of the case is an important aid in diagnosis.

One often hears the unfortunate statement that when a physician is giving mercury internally, he is doing his whole duty; but this is not true, for it is of vital importance to combine local with general treatment. The prognosis is often said to be bad in these cases, and so it may be, if internal treatment alone is employed; but when both methods are combined, even severe cases, like this one, are likely to have their hair restored.

After thoroughly cleansing the head, it is to be washed two or three times a day with a 1 : 2000 or even 1 : 1000 solution of bichloride of mercury; and once or twice daily the following lotion is to be vigorously rubbed into the scalp:

℞.—Tinct. cantharidis . . . 1 ounce.
Tinct. capsici . . . ½ ounce.
Aquæ . . . . ad 4 ounces.
Misce et ft. lotio.

In private practice, it is well to add a little Cologne water. Internal mercurial treatment has been instituted for some time.

The attention of the class was next directed to a young man, a bartender, twenty-two years old, who illustrated the form of eruption known as a miliary papular syphilide. Two months after coitus, or six months ago, a single sore, having an indurated base and discharging pus, appeared on the penis; two weeks later, a papular eruption suddenly appeared over the entire body. This subsequently became pustular, then squamous. He has had no alopecia, but suffers from headache, sore-throat, pains in the bones, and is rapidly losing flesh and strength.

This miliary papular syphilide consists of a syphilitic infiltration around the hair and sebaceous follicles, resulting in the formation of small papules; on the apices of some of these are found purulent crusts. This condition was formerly, although very improperly, described under the name of "syphilitic lichen." Similarly, if a patch filled up with papules becomes irritated, the eruption becomes masked, and the result is what was formerly known as "syphilitic eczema;" but these are only cases of syphiltic eruptions simulating other eruptions, and the nomenclature therefore is faulty. The headache, a result of hyperemia of the meninges, is referred to the convexity of the head, as in this patient; it sometimes involves the frontal and supra-orbital regions, or the area of distribution of branches of the fifth nerve. The pains in the bones are due to a mild hyperemia of the periosteum. Mercurial pills might be given this patient for a long time without much effect. He is now having baths followed by mercurial inunctions.

Another variety of eruption was found in a woman, twenty years old, in whom the initial lesion had appeared two months before as a sore on the genitals. She has had no alopecia, but she suffers from nocturnal headaches. Six months ago, a rash appeared in single points, which afterward coalesced, and still later became scaly. At present the eruption might be mistaken by the inexperienced for a papular eczema; the importance of an early diagnosis in such a case is apparent. There is an absence of the redness, itching and general inflammatory symptoms seen in eczema; the eruption has lasted for several months without showing any disposition for the papules to fuse together. There is a slight tendency to the formation of rings. The eruption is usually present in one of the following forms, viz.: (1) in little groups, as seen in the last patient; (2) diffused in one or more regions, and (3) in the form of rings. This patient is

of good physique and will do well with proper treatment.

Dr. Taylor presented to the class still another form of syphilitic eruption, in a married woman, twenty-seven years of age, who about fifteen months before had had a round sore, with indurated edges, upon the genitals, that in about six weeks was followed by a general eruption. On admission to the Charity Hospital the body and extremities were found covered with scaly patches of rupia, that gave rise to so much itching as to necessitate the administration of morphine. There has been some alopecia; the headache, that has been quite troublesome, has usually begun about 11 A.M. and lasted into the night. Syphilitic headache usually begins toward dusk. Before admission the woman had been treated with mercury to the point of salivation. Since admission she had been treated locally with inunctions of mercurial ointment and washes of bichloride solution, and internally had received pills of bichloride of mercury. Dr. Taylor strongly disapproved of the administration of such pills, which served chiefly to irritate the stomach, and did not admit of putting the patient properly under the influence of the remedy. This case is an excellent illustration of the ravages of rupia, for there still remain upon the face and neck a number of large, hypertrophic cicatrices. Sometimes the burning, itching, lancinating and throbbing pains from these cicatrices are terrible. The eruption is usually extensive, particularly on the back and outer aspect of the legs. Under proper treatment, the scars will be replaced by thin parchment-like cicatrices, and as the hyperplasia leaves the scars these unpleasant symptoms will disappear. The suffering is probably due to peripheral irritation caused by the fibrous tissue contracting upon the ends of the nerves.

HOSPITAL NOTES.

WOMAN'S HOSPITAL, PHILADELPHIA.

CLINICS OF DR. JOHN B. ROBERTS,

Reported by DR. MARY E. ALLEN,
DEMONSTRATOR OF SURGERY.

1. Fatty Tumor of the Omentum; Removed by Laparotomy; Recovery—2. Tuberculous Abscess of the Abdominal Wall Simulating Malignant Disease of the Transverse Colon—3. Localized Suppurative Peritonitis Causing Jaundice; Cholecystotomy, Followed by Death.

I. FATTY TUMOR OF THE OMENTUM; REMOVED BY LAPAROTOMY; RECOVERY.

E. C., a married woman, twenty-seven years of age, gave a history of good health until within the last four months, when she began to suffer from weakness and general debility. Five weeks ago she noticed that her abdomen was beginning to enlarge. Since then it has rapidly increased in size, and incommodes her by reason of the pressure-symptoms and the weight of the fluid. On examination there were evidences of liquid that changed place as the patient shifted her position from the back to either side. There was also a well-defined, flattened, solid mass immediately under the abdominal wall near the umbilicus.

Dr. Roberts stated that the three most common conditions that give rise to ascites are diseases of the heart, of the liver, or of the kidneys. In this case, however, there was no albumin in the urine, nor anything to indicate disease of the kidneys. The heart-sounds were normal and thus that organ was excluded as a cause. There was no appearance of jaundice or enlargement of the liver, or other apparent derangement of that viscus. This condition might also be caused by tuberculous peritonitis or a malignant tumor. The presence of what seemed to be a solid mass against the inner surface of the abdominal wall seemed to point to the latter cause. An exploratory incision was, therefore, determined upon, and a very small opening made in order to insert the finger. Two quarts of fluid slowly drained off and a flat, solid tumor was found adherent to the anterior abdominal wall and the transverse colon. The incision was enlarged downward, cutting through the mass of the tumor, giving rise to some bleeding. The tumor seemed to be in the omentum, and was with great difficulty peeled off from its attachments to the parietal peritoneum and the transverse colon. A number of vessels were ligated before cutting them. After the removal of the tumor, the abdomen was thoroughly washed out with plain sterilized hot water until bleeding had ceased and the water returned clear. The incision in the abdominal wall was about five inches long, and was closed by silk sutures; a short rubber drainage-tube was introduced into the abdominal cavity at the middle of the incision and secured by a suture.

The peritoneum was markedly inflamed at the time of the operation, and adhesions that were readily torn had already formed between the coils of intestine. The chances were, however, so great that the case was malignant and that the tumor would return at an early date that no attempt was made to break them up. After the stitches were tied antiseptic dressings were applied and the patient placed in bed in good condition.

The operation was performed February 14, 1890, at which time her temperature was normal. There was very little rise of temperature after the operation, the highest being 101.2°. She made a very good recovery, sitting up in bed on the 8th of March, and was discharged from the hospital, well, on March 22d. The patient, eight months after the operation, called at the hospital in good health.

Microscopic examination of the tumor, made by Dr. Marie K. Formad and Dr. H. F. Formad proved it to be not a malignant tumor as was at first feared, but a lipoma of the omentum.

Death would certainly have ensued if this growth had not been attacked. The fact that omental growths are so frequently malignant has made surgeons feel very doubtful of permanent cure after their removal. This case makes the extirpation of omental tumors appear much more hopeful, since microscopic examination alone can determine their nature. Dr. Roberts had a few weeks previously assisted Dr. L. W. Steinbach to remove a growth that had exactly the same clinical characteristics, and was in the same way adherent to the anterior abdominal wall and had the transverse colon imbedded in it. This case, however, did not terminate so favorably. The woman left the Jewish Hospital in three weeks, apparently cured; but was readmitted a few weeks later and died soon after. The growth in this

latter case was supposed to be a sarcoma, though it is not known whether or not a microscopical examination was made.

2. TUBERCULOUS ABSCESS OF THE ABDOMINAL WALL SIMULATING MALIGNANT DISEASE OF THE TRANSVERSE COLON.

A. H., a colored girl, sixteen years of age, entered the hospital for an obscure swelling of the abdomen. She belonged to a tuberculous family, her father having died of consumption when she was four years of age. She had also lost a brother and a sister, but did not know the cause of their deaths. She herself seems to have enjoyed a fair degree of health from childhood, but for her age appears very undeveloped and has never menstruated, except a very slight show about a year ago.

She first became aware of something wrong with the abdomen about eight months ago. There was a tender spot in the abdominal wall on pressure when she stooped over the washtub. From that time the abdomen began to increase in size, and sharp pains would from time to time shoot through it. On admission she had a very poor appetite, and was also afraid to eat much because of the after-distress which food occasioned. She was, therefore, very anemic. The tender spot extended all around the umbilicus, and a considerable distance to either side. The urine was normal, as were the heart-sounds. There was tuberculous infiltration of the right lung. On entering the hospital she was put to bed and acid baths used over the liver and abdomen generally. Five drops of syr. ferri iodidi were given after meals. Her temperature on admission was 99.4° and continued above normal. It was, therefore, decided to make an exploratory incision and ascertain the nature of the swelling that in position and outline resembled a growth within the abdomen. Omental or colic malignant disease was strongly suspected.

She was accordingly etherized and prepared for operation with every antiseptic precaution. A very small incision was at first made above the umbilicus down to but not through the peritoneum. The mass could be felt below the fingers and toward the pubes, and the incision was accordingly increased downward. The incision was carried around and below the umbilicus, and when all the abdominal muscles or rather the tendons of these muscles had been divided, a cavity containing tuberculous pus was reached. The abscess was thoroughly evacuated, curetted, and washed out with filtered boiled water. It was a large cavity extending across the abdomen for about four inches on each side of the median line. The cheesy pus was contained in a space between the muscles and the peritoneum, which naturally was thicker than normal. Two drainage-tubes were used, extending to either side of the incision, and were secured in place by sutures. The incision was left open to heal by granulation and antiseptic dressings were applied. Two hours after the operation the temperature was normal and did not rise higher than 101.3° after the operation. The drainage-tubes were frequently washed out with a two and a half per cent. carbolic acid solution, and were removed February 16th, the healing of the wound having progressed favorably. After this it was washed twice daily with the carbolic acid solution and an iodoform suppository inserted each time. The patient was discharged well after a somewhat long convalescence owing to the large cavity that had to close up by granulation.

3. LOCALIZED SUPPURATIVE PERITONITIS CAUSING JAUNDICE; CHOLECYSTOTOMY, FOLLOWED BY DEATH.

A married woman, forty-two years of age, came first to the out-clinic of the hospital, on account of severe attacks of pain in the region of the gall-bladder. These attacks she had had periodically for sixteen years, and by good physicians they had been pronounced to be biliary cōlic. Nine months before, the paroxysms increased in severity, the pain radiating from the gall-bladder to the shoulder, and lasting for three or four days. They were only relieved by morphia. She had not at any time been jaundiced. She first noticed a lump in the side, after the attack nine months ago. Her first visit to the clinic was made on April 21st, at which time she was suffering much pain and was very much constipated. Purgatives were given with temporary relief. During a visit, three weeks after, she was suddenly seized with a paroxysm so severe that she was unable to leave, and was accordingly placed in bed in the wards. Cups were applied over the loins, and counter-irritation to the abdomen. Morphia was given hypodermatically. There was an excessively tender mass, about the size of a fetal head, in the epigastric, umbilical, and right hypochondriac regions. The urine contained albumin and biliary coloring matter. The temperature was 103°; pulse irregular and feeble, and counted 136 to the minute. Constipation existed. Light-colored stools were obtained by medication. Morphia was given when needed to relieve pain, and the cups and counter-irritants repeated when necessary. Sodium phosphate, ʒj three times daily, was ordered, followed by enemata of warm water and five grains of quinia in suppository, and spt. etheris nit., fʒss in water, by the stomach every three hours. The patient was beginning to be jaundiced.

May 14th and 15th: Temperature 103.2°; pulse 120; jaundice deepening. Sodium phosphate replaced by half-teaspoonful doses of spirits of chloroform every two hours. On the 16th, ice-bag used for severe headache. Temperature 102.6°. Treatment continued the same. Stools remained small and generally colorless. One grain of calomel given on the 22d, and stimulation begun with whiskey, fʒss in milk, three times a day. On the 27th, olive oil, in fʒss doses, was substituted for the chloroform. The temperature remained at about 102°–103° in the morning and a degree higher in the evening. There were chilly sensations on the 27th.

An operation having been consented to as a last resort, the patient was thoroughly cleansed and etherized on May 29th. It was decided to make the incision in the right hypochondriac region immediately over the tumor, the more readily to reach the seat of trouble. The abdomen was markedly tympanitic, and the whole surface deeply jaundiced. No difficulty was encountered in incising the abdominal walls and very little hemorrhage occurred. When the peritoneum was reached it was found to be thickened and opaque. It was raised upon tenacula and incised, the omentum pressing into the opening immediately. Omentum and distended intestines were kept back by flat sponges and the gall-bladder brought into view. The gall-bladder was greatly dis-

tended, and yet was so bound down by adhesions as to make it impossible to bring it up sufficiently to stitch it fast before opening it. A trocar was, therefore, thrust into it after protecting the abdominal cavity by sponges, and about a pint of grass-green bile evacuated. Below the bladder, and binding it to the transverse colon and liver, was an inflammatory mass the nature of which was not made out at the time of the operation. The edges of the opening in the collapsing gall-bladder were kept elevated by catch forceps and the opening was enlarged sufficiently to explore the interior with the finger. The walls of the bladder were velvety and thickened, but no stone could be found, even after following the cystic duct with a probe and thoroughly exploring the course of the canal.

The reason for the great retention of bile and the universal jaundice was still obscure; and the operation was completed by sewing the edges of the opening in the gall-bladder to the parietal peritoneum along the edges of the abdominal incision, the margins of which were drawn in considerably because of the impossibility of loosening the gall-bladder from its adhesions. The abdominal cavity was carefully irrigated with plain boiled water and dried with sponges. Two drainage-tubes were placed, one running transversely, the other down toward the pelvis. A long drainage-tube of small caliber was also placed within the gall-bladder after thoroughly irrigating its interior. The orifices of all the tubes were protected by rubber dam and sponges, that in the gall-bladder being entirely separated from the others. Abundant layers of antiseptic gauze were placed about the wound after it was sutured and the whole kept in place with a many-tailed flannel bandage. The patient was put to bed in a fair condition and the foot of the bed elevated to encourage the flow of blood to the brain. She was comfortable during the afternoon, but during the night the temperature rose with the onset of acute sepsis and the patient died at 1.30 P.M. on May 30th.

An hour after death a partial autopsy was performed through the site of the operation, revealing evidences of extensive inflammation at some preceding period. The adhesions were very firm and the inflammatory mass that bound everything together was ascertained to be a peritoneal abscess containing about two ounces of greenish ill-smelling pus. No stones were found, and it was no doubt the pressure of this mass upon the gall-ducts that caused the retention of bile and the jaundice.

CURRENT LITERATURE.

EXCISION OF CHANCRE.

WICKHAM has expressed himself as strongly opposed to the theory and method of Jullien in the management of the chancre. The history of excision of syphilomata does not date back more than a dozen years. Wickham considers surgical interference with the chancre as useless. He gives a brief *résumé* of the article of Jullien that appeared in *L'Union Médicale*, 1891. The latter insisted that the excision should be total, it being requisite to invade healthy tissue, following the precepts that regulate operative procedure in the case of cancerous tumors. It is not necessary to produce general anæsthesia; an application of cocaine, or, better, an interstitial injection, will suffice. Wickham regards methodical excision as too painful an operation for cocaine anæsthesia, unless the chancre be situated upon the prepuce. Jullien observes that after the excision of a chancre the resulting cicatrix is scarcely, if at all, visible. Leloir, of Lille, however, holds that, save exceptionally, the result of the excision of a chancre is to produce only an apparent cicatrix. In the course of the last ten years Jullien has excised eighteen chancres. Only four of the patients seem to have been entirely cured of the general disease. The others have all presented manifestations of constitutional syphilis. Nevertheless, Jullien has concluded that "the excision of the primary syphiloma is an operation not only legitimate, but even useful, often beneficial, and at times heroic." In short, according to his view, the individual is not infected when the chancre appears. To excise the indurated chancre in its incipiency is to prevent the appearance of the secondary manifestations, or, at least, to attenuate them in great measure. Such a theory is seductive; demonstrated as scientifically correct, it would furnish a powerful lever in preventing the consequences of syphilis, at times so terrible; but a number of facts, experimental and clinical, are opposed to this idea. The consensus of opinion among syphilographers is also against such a theory. In 1881, Mauriac concluded that "excision is useless; that it does not constitute an abortive treatment for syphilis; and that it does not attenuate the immediate or remote consequences of this intoxication. In 1880, Quinquaud had three failures; Terrillon, one; Zeisel, five; and Klink, one. Many others have failed to secure satisfactory results. Vidal, Rollet, Diday, Brocq and others enroll themselves as opposed to the theory advanced by Jullien. Especially do these experienced writers reject the assertion that the manifestations of the secondary stage of syphilis are attenuated by the excision of the initial chancre. As Leloir has said, "the benign secondary manifestations are the rule; the grave, the exception." Wickham verifies the truthfulness of this assertion, as demonstrated during the eighteen months of his residence in l'Hopital du Midi. He asserts positively that syphilis is a general disease from the moment of infection. Experimental and clinical facts ill accord with the view of Jullien. Even in the cures reported by Jullien there are possibilities of error. In one, the tonsils were covered with a suspicious-looking eruption; in another, that had not been under observation for eight months, there was a chancrous ulceration of the frenum. In still another there was evidently an error in diagnosis, as the primary syphiloma appeared on the fifteenth day after the impure coitus. In only five instances were the secondary manifestations modified in their intensity. Wickham cites the experiments of Fournier, who, in 1856, inoculated with syphilitic virus patients in the case of whom chancres had been previously excised; the results were negative; this would indicate that the chancre is not a local lesion, but the manifestation of a general condition. Wickham also quotes the results of the experiments of Ricord, formerly a strong partisan of the abortive treatment of syphilis by cauterization. Ricord concluded that cauterization and excision were both entirely useless in preventing general infection of the system.—*La Médecine Moderne*, 1891, No. 10.

THE GERMICIDAL PROPERTIES OF CORROSIVE SUBLIMATE.

As the outcome of experiments conducted in the pathological laboratory of the Johns Hopkins University, ABBOTT (*The Johns Hopkins Hosp. Bull.*, April 12, 1891) has found "that, under the most favorable conditions, a given quantity of sublimate has the property of rendering inert only a certain number of individual organisms—that is to say, the process is a definitely chemical one, taking place between the protoplasm of the individual bacterium and the sublimate in the solution. The disinfecting activity of the sublimate against organisms is profoundly influenced by the proportion of albuminous material contained in the medium in which the bacteria are present. The relation between the golden pyogenic staphylococci and sublimate is not a constant one, organisms from different sources and of different ages behaving differently when exposed to the same quantity of the disinfectant, for the same length of time. The activity of the organisms that survive the exposure to the sublimate may undergo a temporary attenuation. This attenuation, however, may be caused to disappear by successive cultivation in normal media. By the method employed it was possible to select from a culture the most resistant forms in that culture. Many of the results of previous experimenters, who have assigned to corrosive sublimate more powerful disinfectant properties against the staphylococcus pyogenes aureus in cultures than the observations reported in this paper indicate, are attributable to the neglect of certain precautions now recognized as essential to the proper conduct of such experiments.

"In the light of these facts it is plain that for use in surgical practice the solutions of corrosive sublimate do not possess all the advantages hitherto attributed to them.

"There are at least two serious objections to the employment of sublimate solutions upon wound-surfaces: First, the albumin of the tissues and fluids of the body inhibits the efficacy of, or indeed renders entirely inert, the solution employed; secondly, the integrity of the tissues is materially impaired by the application of sublimate solutions. The first objection cannot be met with certainty, for the surgeon possesses no means by which he can determine the quantity of albuminous material with which his solutions are to come in contact; in any case, this large quantity of albuminous material is an almost insuperable obstacle to complete disinfection with sublimate. The second objection is equally serious. There is sufficient evidence that the normal tissues and fluids of the body possess the power of rendering inert many kinds of organisms that may have gained access. This function is therefore diminished, or, indeed, may be quite destroyed by any agent that brings about alterations in the constitution of these tissues. Just such changes are known to follow the application of sublimate solutions. If, as a result of the application of the sublimate, we bring about in these tissues a condition of superficial necrosis, they are much less able to resist the invasion of infectious organisms than they would have been had they been left in their natural condition.

"There are, perhaps, few substances that possess in a higher degree than corrosive sublimate the property of disinfection in the strict sense of the word; at the same time there is nothing employed for this purpose that requires greater care in the manipulation, in order to obtain the best results. For the foregoing reasons we seem hardly justified in continuing to give to corrosive sublimate the first place in the list of substances that may be employed practically for the purpose of rendering innocuous materials containing the germs of infectious maladies."

A ROLL OF HAIR IN THE FEMALE RECTUM.

AT a meeting of one of the Polish societies, JONSZER (*Gazeta Lekarska*, 1891, 18) reported the case of a dark-haired girl, seventeen years old, in whom menstruation had been regular since the thirteenth year, who complained of griping abdominal pains and rectal tenesmus, with a moderate mucoid discharge from the rectum. The stools were at first normal in frequency, but soon there appeared obstinate diarrhea, the stools becoming very frequent (up to a score of times a day). At first they consisted of a thin, yellowish fecal matter, without particular fetor; but subsequently they assumed a whitish appearance, being composed mostly of mucus and highly offensive pus; the abdominal pain and tenesmus increased in intensity. Still later the pain became especially severe about the rectum, and there supervened frequent and refractory vomiting (of greenish, later on greenish-brown, sometimes blood-stained, fluid masses); the patient was unable to retain any food in the stomach; her general state rapidly growing from bad to worse (in spite of assiduous treatment for "dysentery," "enteritis," and like affections, by one practitioner after another). A number of months later she happened to come under the author's observation, who (apparently suspecting some intestinal obstruction near the rectum) resolved to make a digital exploration *per anum*. The examination revealed the presence of a sponge-like foreign body that could be extracted (by means of the thumb and forefinger introduced into the rectum as high up as was possible) only with considerable difficulty. It proved to be a bottle-shaped, fairly hard, felt-like mass of blonde hairs, glued together by offensive pus and mucus. The "bottle" measured eighteen centimeters in length and eight in diameter (about the base), individual hairs averaging forty centimeters. A large quantity of a fetid, muco-purulent matter welled out from the anus after the extraction, the discharge persisting for about a week. A steady, though rather slow, recovery ensued, the appetite, stools and sleep returning to the normal in about five weeks, while anemia and emaciation disappeared much later. According to the author's view of the case, the rectal hairy mass resulted from the patient having been in the habit of swallowing her own hairs. The somewhat awkward circumstance that the rectal hairs were of a color entirely different from that of the head, Dr. Jonszer is inclined to attribute to some obscure chemical influence of the gastric and other digestive juices on the swallowed hairy structures. It must be added that the girl absolutely denied having ever been in the habit of swallowing her hair.

[In an editorial note, Dr. Wladyslaw Gajkiewicz (*ibid.*, p. 349) very justly differs from Dr. Jonszer in regard to the nature of the case, and suggests the most plausible explanation, according to which the author had to deal simply with a dermoid ovarian cyst bursting into the rectum. In the same light the case is also viewed by

Dr. K. E. Wagner (see *Vratch*, 1891, No. 18, p. 450). A companion case of a hairy dermoid ovarian cyst bursting into the bladder, reported by Dr. Tchügünoff, of Shadrinsk, may be found in the *London Medical Record*, April, 1885, p. 148.] — *Provincial Medical Journal*, July 1, 1891.

HYSTERICAL STAMMERING.

KRAMER reports an interesting case of hysterical stammering in an unmarried woman, twenty-six years old. Hysterical attacks are said to have first appeared following a surprise and ill-treatment in a wood. Two years subsequently she had two convulsions, separated by an interval of a day. After the second, speech was observed to be disturbed. The disturbance took the form of aphasia; to all answers the patient replied with the single syllable "ma," repeated in rapid succession. After the aphasia had lasted a short time, stammering was observed. At first this was so marked, and the sounds were produced with such evident effort, that one could not possibly understand what was intended to be said. It was evident that the patient understood, and that only the disturbance of speech interfered with reply. This was shown by the fact that in speaking the patient repeatedly began with one syllable; at first the sounds were produced only in the larynx as short expiratory jerks developed by pressure; then they gradually assumed the sound of spoken syllables and were repeated many times; then the next syllable, then both syllables—at first imperfectly, the vowels running into one another, but subsequently becoming more distinct. When the entire word was grasped it was quickly repeated several times, as though to fix it. Having gained the first word, the second was attempted in the same way. Between the individual syllables, as they were uttered, there was a violent hiccough, or whimpering and groaning.

There was no difficulty in writing. The stammering was accompanied by a feeling as though the tongue "were of tin-plate." In fact, the patient could not thrust her tongue beyond her teeth, but moved it to and fro in the mouth, with difficulty and helplessly. Reading was attended with the same difficulty as speaking. The stammering, in its severest form, lasted from a day to a day and a half and then improved; in its milder form the stammering assumed the character observed in weeping. After about ten days the stammering disappeared entirely, to return on excitement. As is usually the case in hysterical affections, the stammering was reproduced after anesthesia with chloroform.

The reasons for regarding the stammering as hysterical are: In connection with an hysterical attack, aphasia occurred for a short time and was followed by stammering that lasted several days. Other symptoms that occurred at the same time are right-sided hemianesthesia and ovarian tenderness, contracture of the right leg, paresis of the right arm, amblyopia and concentric limitation of the fields of vision.

The stammering may be looked upon as a stage of improvement in the aphasia, just as the relaxation of the arm may be regarded as an improvement in the tetanoid spastic paresis that was present at first. As to the nature of this stammering: if mutism corresponds to total paralysis of all the organs concerned in phonation, then in stammering there must be an incoördination in the movements of these organs. As a matter of fact, Ballet and Tissier report having seen variously modified disturbances of motility of the tongue, and in Kramer's case they were also present.—*Prager med. Wochenschrift*, 1891, No. 14.

A CASE OF TIC CONVULSIF.

STEMBO (*Berliner klin. Wochenschrift*, July 13, 1891) has reported the case of a man, thirty-seven years old, with a history of masturbation, in whom at sixteen twitching was observed in the muscles of the neck, which progressively invaded the muscles of the face, of the extremities, of articulation, and the diaphragm. The movements of the tongue occasioned abnormal sounds. From time to time the chin was elevated and the head turned to the left; the upper extremity was extended. At intervals the patient would tap with the palm of his hand the person of one with whom he was speaking. At other times he would stroke the side of the protruded tongue with the index and middle finger of the left hand and then dry the moistened fingers on the head or neck. The manifestations were less decided upon the right side. They were aggravated by observation, ceased during sleep and could be temporarily suppressed by a strong effort. On the street, the patient felt impelled to hurry until he had passed all pedestrians. As he passed or met one he uttered a peculiar expiratory sound. He repeated spoken words, especially bad language. Sensibility was unimpaired. The superficial reflexes were normal. The deep reflexes were exaggerated. The neuro-muscular irritability was heightened. There were no evidences of hysteria. A son of the patient, sixteen years old, presented incipient evidences of the same affection.

PERITONEAL SECTION.

BYFORD (*Transactions Gynecological Society of Chicago*, April 17, 1891) has reported a third series of peritoneal sections, with a comparative study of 159 consecutive cases.

Nature of operation.	Operations.	Recovered.	Died.	Percentage of recoveries.	Percentage of deaths.
Hysterectomy	10	9	1	90	10
Oöphorectomy	16	16	0	100	
Ovariotomy	11	10	1	90.91	9.09
Myomotomy and oöphorectomy	1	1	0	100	
Nephrectomy	1	1	0	100	
Pelvic hematocele	1	1	0	100	
Drainage of abscess	1	1	0	100	
Exploratory incisions	2	1	1	50	50
Incomplete operations	2	0	2	...	100
VAGINAL SECTIONS.					
Hysterectomy	8	8	0	100	
Ovariotomy	1	1	0	100	
Total	54	49	5	90.75	9.25
Complete operations	52	49	3	94.23	5.77

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SATURDAY, AUGUST 22, 1891.

THE SPELLING OF MEDICAL WORDS.

EARLY or late every educated and clear-headed man comes face to face with the duty of deciding how he shall spell words that may rightly be spelled in two ways. Most of us shirk the duty, and drift without definite rules or principles, our orthography being almost as illogical and variable as if we had lived three hundred years ago. If, in this condition of mind, one is called as editor to make "a rule of the office" as regards disputed spellings, he may either hide himself behind the breastwork of some one lexicographer to the exclusion of all others, or he may "face the music," and endeavor to determine rules founded upon other principles than those of simple authority chosen by an eye with extreme concentric limitation of the field of vision.

It will not do to say that all this is a matter of no consequence, too trivial to waste thought upon; because, as all educated men know, that would be manifest superficiality and error.

The question of the spelling of medical English is at last, of course, one with the question of the spelling of English generally, and the rules of the special department must be consonant with the laws of the whole language. It is, however, strange that medical lexicographers have shown themselves somewhat indifferent to the trend of general American usage, and that men so busy and independent as physicians still adhere to tedious usages that in great part have been discarded by their philologically more progressive brethren of the lay world.

The conservative mind, scorning innovation, may sneer at changes in orthographic customs, but in a final analysis the most abject philological tory is without a foot of logical ground whereon to plant his feet. Language may be likened to a bicycle that is in a condition of unstable equilibrium, and must move continually if it keep upright. The very language we speak and write is itself different from the language out of which it sprang, simply by the repeated superpositions of changes in pronunciation. It is utter nonsense to think of seizing upon any one moment or phase and saying that here change must stop. The pronounced language is a living, ever-changing, ever-reacting organism. It is the materialized exponent of man's spirit, and, like that spirit, ever becoming other. Change is its most fundamental law. The dead or printed language, which is the representative of the pronounced language, must sooner or later be changed to conform to the living. Thus new dialects and new languages come into being, and thus repeated orthographic changes are constantly necessary. The fetish-worshipper of old orthography can go but a very little way back. He has accepted the changes that were wrought in his language a hundred years ago, but refuses the changes that were made twenty-five years ago and will refuse those that will be made in the next twenty-five years. He no longer writes *colic*, *physic* and *music* with a *k* after the *c*, but he sticks to it that *hemorrhage* and *etiology* and *anesthetic* must be written in the ancient way. His son will accept the shorter way of writing these words that his father spurned, but the son will also resist the reformers of his day as his father is now struggling against the reformers of our day.

Into the vexed question of general phonetic reform we have here no call to enter. There is nobody that does not recognize the ludicrous absurdity of English orthography and the burdens and clogs it imposes on the young mind and hence upon all progress. The fundamental evil and misery consists in the fact that according to current orthography, we have dozens of symbols for one sound and dozens of sounds for one symbol. That the sound of long *e* should be expressed by as many as nine signs is unendurable (*e.g.*, *meet*, *mete*, *meat*, *machine*, *grief*, *receive*, *key*, *people*, *ægis*). All the prominent philologists of America and of Great Britain are agreed

about the evil, and are practically in accord as to the remedy. They say that when etymological considerations do not prevent, all letters useless in pronunciation should be dropped. But this is positive innovation, and the world will accept it slowly. Our especial problem is not to effect desirable novelties in reform, but to choose between changes that have been introduced and that are in various stages of the process of acceptance. It would appear that the principles that should guide us are simple and at the same time fundamental:

1. When the proposed change has acquired a genuine and respectable vogue it should be held worthy of consideration;

2. If it is in conformity with the actual pronunciation, and the drift of tendency;

3. If it does not interfere with etymological considerations;

4. If it lessens labor, friction, and the space required.

5. If inevitable.

As to the first point, it is incontrovertible that the changes advised, or even permitted, by such unexceptionable authorities as the new WEBSTER and the CENTURY dictionaries, must rest on the firmest basis of philological wisdom and of commendable custom. No greater amount of money (with the risks and responsibilities for error that this implies) has ever been invested in such undertakings, and a no more splendid union of philological authorities has ever been enlisted in the preparation of such works.

As to the last point, the certainty of coming changes, it alone might be held decisive. Most of the new spellings advised at the conclusion of this editorial seem absolutely inevitable. If so, why prolong the transitional period? When the genius of our people demands these changes it were best to accept them quickly without shuffling delay and irrational prejudice. We all know the kind-hearted lady who could not bear to plunge her lobsters into boiling water, and was happy in first putting them into cold water which was then brought very, very slowly to the boiling-point.

The greatest bone of contention between the progressists and the conservatives consists in the English equivalent of the Greek αι. Shall we say *hæmorrhage*, and *anæmia*, and *ætiology*, or shall we say *hemorrhage*, *anemia*, *etiology*, etc.? Our belief is that the latter spelling, if not already the more customary, is bound to become so.

A genuine native-born American has an instinctive dislike of an Umlaut, or a conjoined vowel-diphthong. He looks askance at it, very much as a "cow-boy" does at a "dude." The shorter spelling lessens labor and mental friction, is not an etymological sin,[1] and is representative of the common pronunciation. If this position be assented to, it needs no further excuse and explanation of reasons to justify as right and commendable the following rules which have been adopted by the staff and proof-readers of THE MEDICAL NEWS:

1. The English equivalent of the Greek αι (as in αιμα, αισθητος, παιδος, etc.) will be *e*, instead of the elder form *æ*. For example:

Hemorrhage,	Anemia,
Hematemesis,	Uremia,
Hematic,	Hyperemia,
Hematin,	Hydremia,
Hematoma,	Leucocythemia,
Hematuria,	Pyemia,
Hemoglobin,	Septicemia,
Hemorrhoids,	Sapremia,
etc., etc.	*etc., etc.*
Esthesia,	Etiology,
Anesthesia,	
Hyperesthesia,	Orthopedic,
Anesthetic,	Pediatric,
Gynecology,	Ether.

2. The Greek οι will be represented by *e*, instead of *æ*. *E. g.:*

Edema,	Blenorrhea,
Esophagus,	Gonorrhea,
Celiac,	Spermatorrhea,
Cecum,	Otorrhea,
Homeopathy,	Apnea,
	Dyspnea,
	Orthopnea.

3. Liter, Center, Meter, Fiber, *etc.*, will be so written. (Chancre is correct—for a special reason.)

4. Gram, Previa, Precordia, Fetus, Fetor, Fetid, Licorice, Dram, Labor, Rigor, Color, Gluteus, Gluteal, Ozena, Rachitis, Rachialgia, *etc.*, are here properly written.

5. Leucomaïne and Ptomaïne should be written with the dieresis.

6. Unless we are brave enough to do without authorities, we shall have to submit somewhat longer to Cæsarean, Rhythm, Nævus, Framboesia, Amœba and Pharmacopœia.

[1] In medical words there is generally no true etymology. They did not grow out of the Greek, but the Greek words were seized upon to serve as symbols and aids in forming new words, as it were with malice prepense, and often with a laughable ignorance of or indifference to the roots and laws of word-formation. Moreover, in these days of printing and detailed history, etymology is not so stern a schoolmistress as in former times.

THE ADDRESS IN MEDICINE BEFORE THE BRITISH MEDICAL ASSOCIATION.

LAUDER BRUNTON is one of those rare men in medicine whose writings are valuable not only for the information imparted, but even more for the stimulus given to the reader's thought. A careful investigator and an independent thinker, he throws out, apparently at random, now and again, hints that, followed up, may lead to important advances in theory and practice. Thus, his speculations as to the relations of wave-interference with the chemico-vital processes concerned in the action of toxic and therapeutic agents contain, beyond question, profound truths. In his address at the recent meeting of the British Medical Association at Bournemouth, an abstract of which appeared in THE MEDICAL NEWS for August 8th, and which is published in full in the *British Medical Journal* for August 1, 1891, DR. BRUNTON has advanced, without undue insistence, a plausible explanation of a portion of the beneficial influence of blisters. This theory deserves more than passing mention, for it involves much more than its immediate context implies. Referring to the observation of HANKIN that a mouse that, after being inoculated with anthrax, has a few drops of rat's serum injected into it becomes as resistant to the poison as is the rat, BRUNTON suggests that the application of blisters may be "a form of endermic administration of proteid matters, derived in part from the blood, but altered in their passage from the vessels to the surface of the skin, and thus having an effect on the body entirely different from what they would have had if they remained in their ordinary place."

MAGNANT (*Bull. Gén. de Thérap.*, May 15, 1891) has perhaps anticipated BRUNTON in this idea, for he treated tuberculous and other patients (varicose ulcer, diabetic ulcer, enlarged cervical gland) with injections of the serum obtained by blistering healthy persons. But the hint is worth serious investigation. We know comparatively much of bacteria, comparatively little of the physical, chemic, vital conditions of the invaded organism, which render the invasion of bacteria harmless or harmful, as may be. The thought is suggested that we may learn so to modify the vital processes as to produce and maintain in all persons the immunity undoubtedly possessed by some. Whether or not BRUNTON'S speculation as to blisters be well founded, the greater research it implies might well be undertaken, and by none so well as the great teacher of pharmacology himself.

DR. BRUNTON is right beyond question when he says that those who used bleeding in former times "were not fools." Their theory was that by depleting the circulation they could mechanically overcome stasis, lessen the heart's labor, and remove from the system "unhealthy humors." The Bournemouth lecturer says: "Experiments upon animals have shown that withdrawal of blood from the veins causes absorption of proteid matters from the tissues and these may have an action of their own upon the blood and tissues generally with which they are thus brought into contact. Indeed, it is possible that the benefits of free purgation may be partly due to a similar action." This language may a hundred years (or less) hence seem as barbarous as that of past centuries does to some of the ultra-scientific sciolists of to-day. But the important fact remains that, explained or unexplained, or but partially explained, useful measures like blistering and bleeding are not to be consigned to the limbo of delusions, because fashion and unthought abused them in the past, or because unthought sets the fashion of decrying them in the present.

A significant feature in the retrospect of "Twenty-five Years of Medical Progress," as portrayed by DR. BRUNTON, is the great influence of what he terms "Darwinism" upon medicine. The new biology has made itself felt in anatomy and physiology, but less than it should have done, we fear, in pathology and therapeutics.

We confess, however, to as much surprise at reading the name of DARWIN where that of SPENCER should have been, as the lecturer's friend experienced in 1866 at finding him ignorant of the existence of *The Origin of Species*. Great indeed was the work, merit, and influence of DARWIN—and part of DR. BRUNTON'S tribute to that noble character is appropriately paid; but the "doctrine of evolution" in its modern form and its application for good or for ill to the study of "the evolution of the elements, of the planetary systems, of living beings, of communities, of customs, of laws, of literature, science and art," are SPENCER'S. DARWIN cultivated—wondrously well—but a limited portion of the vast field of thought rediscovered and largely prepared for the philosophic husbandmen of all time by SPENCER. But the finished character of DARWIN'S work when he brought it to public atten-

tion, and his fearless extension to man of the principles applied to other animals, have largely identified his name in popular parlance with the broader principles laid down by SPENCER.

If medical men would read, more than they do, the works of these two great thinkers; if they would emulate the painstaking, accurate observation of the one, and strive to attain the comprehensive view of relations between facts exhibited by the other; they would not only be better physicians, but they would also more nearly resemble their predecessors, by whom, in a time of widespread ignorance and superstition, the learning of Nature was sacredly treasured, and the love of knowledge preserved from extinction.

PERVERTED CHARITY.

PHILADELPHIA may well be proud of her numerous charities, in the work of which her hospitals take no small part, but it must be a peculiar charity that dismisses from its care patients in the case of whom there can unfortunately be no hope of recovery. That patients suffering with chronic, incurable diseases should be excluded from institutions maintained by private resources might not be ground for criticism, but it does seem criminal that, from one motive or another, patients should be sent out of hospitals in the case of whom, once admitted, the improbability of recovery should become manifest. It is a legitimate and laudable ambition on the part of any hospital to reduce its mortality-rate to the lowest degree, but, apart from all material considerations, the dismissal of dying patients, with this end in view, cannot be too strongly condemned. A purer, sweeter, nobler charity cannot be conceived than the care of the hopelessly ill.

The sketch that we have made is not taken from an hypothetical case, but from a living picture, in colors that cannot be too vividly reproduced. Nor is the instance an isolated one. It can be no secret that cases hopelessly chronic are transferred from general hospitals to the city hospital.

The hospital is a much-abused institution. To its credit be it said, however, that if it err it is usually on the side of safety, so that whenever doubt arises it inures to the benefit of the patient; but for some reason that does not admit of ready explanation there occasionally transpires such an occurrence as is here recorded. It were far better that a hundred doubtful cases be admitted to the hospital than that by dismissal a single life be hurried out of existence.

REVIEWS.

EINFÜHRUNG IN DAS STUDIUM DER BAKTERIOLOGIE, MIT BESONDERER BERÜCKSICHTIGUNG DER MIKROSKOPISCHEN TECHNIK. FÜR AERZTE UND STUDIRENDE. Bearbeitet von DR. MED. CARL GÜNTHER, in Berlin. Zweite, vermehrte und verbesserte Auflage. Mit 72 fast sämmtlich nach eigenen Präparaten vom Verfasser hergestellten Photogrammen. Leipzig: Georg Thieme, 1891.

INTRODUCTION TO THE STUDY OF BACTERIOLOGY, WITH ESPECIAL REFERENCE TO MICROSCOPICAL TECHNIQUE. FOR PHYSICIANS AND STUDENTS. By CARL GÜNTHER, M.D., of Berlin. Second, enlarged and improved edition. With 72 photo-micrographs prepared almost exclusively from personal specimens.

BOOKS on the technique of microscopy and upon bacteriology have multiplied within the last half-dozen years until their number is legion. The department of clinical medicine represented by microscopical investigation received a powerful impetus with the birth of the science of bacteriology. Who can compare the optical instruments of to-day with those of ten years ago and not be moved with admiration at the wonderful advances that have been made? Then it would have been thought chimerical to have proposed a microscope that by the mere substitution of an ocular, could furnish with the same readiness and clearness of definition a magnification of fifteen hundred diameters and one of a hundred; that these enlargements could be reproduced and permanently recorded for illustration; and further, that by means of special apparatus magnifications of thirty or forty thousand or more could be projected upon a screen for demonstration.

The first edition of Günther's *Bacteriology* was exhausted in eight months. This, the second, in a terse and agreeable manner records the essentials of a study introductory to the subject of bacteriology, calculated to be useful alike to the student and to the general practitioner who does not contemplate more than a general acquaintance with the subject, adapted to his purposes as a clinician.

What a tribute to the father of modern bacteriology that scarcely a page but contains the name of the immortal Koch or of his pupils. Due credit, however, is not withheld from his distinguished confrères, Pasteur, Flügge, Hueppe, Löffler and others, as well as to Leuwenhoek, Cohn, de Bary and others.

Speaking of cover-glass preparations, Günther says that these may be disinfected, prior to staining, by preservation for a variable period in a solution of sublimate (sublimate 1, hydrochloric acid 5, water 1000), in which they may remain for an hour without diminution of staining affinity. In a note he adds that although the anilin-stains have decided anti-bacterial activity, all bacteria are not destroyed by saturation with the stain.

The method of staining tubercle bacilli in cover-glass preparations that he uses by preference, consists in staining in the usual way with anilin-oil fuchsin and decolorizing with a 3 per cent. solution of hydrochloric acid in alcohol; then after staining with methylene-blue and drying he passes the preparation three times through the

flame of a Bunsen burner. By this last procedure he fixes the stain permanently. We should fear lest other than tubercle bacilli remain stained or all be decolorized. Günther makes the point that *pure* alcoholic solutions of basic anilin stains are incapable of staining, and that *absolute* alcohol will not decolorize bacteria as well as animal tissues.

In the study of stained preparations he insists upon what he terms "maximum illumination," *i. e.*, the adjustment of the mirror (always plane), and of the condenser so that the apex of the cone of reflected light corresponds to the centre of the field at the plane of the preparation.

At the end of the work are seventy-two on the whole excellent photograms of the more common varieties of microörganisms.

The typography and execution of the book are excellent.

ELECTRICITY: ITS APPLICATION IN MEDICINE. By WELLINGTON ADAMS, M.D. Vol. I., pp. 105. Detroit: George S. Davis, 1891.

SHOULD the second part of Dr. Adams's admirable little book be as original, comprehensive, and practical as this, the first volume, it will when completed out-rank any of its size on a similar topic that has appeared. There seems no reason to doubt that Dr. Adams will disappoint us. He is practically conversant with general electrical science, and is, moreover, an original thinker and experimenter. His authoritative style—a striking feature of the book—may well be pardoned, in view of his evident grasp of the physical side of the subject, which he handles in a manner to excite admiration. We feel bound to express mild surprise that he should class the Barrett milli-ammeter—an instrument that, like the Barrett silver-chloride galvanic and faradic battery, though handsome in appearance, has proved in our hands utterly untrustworthy—second to his modification of the excellent Weston ammeter. It is the more curious, since he rightly characterizes the Barrett milli-ammeter as neither accurate nor reliable. The Weston, we understand, is quite as he describes it: "The first absolutely correct, direct-reading *dead-beat* milli-ammeter that has ever been placed upon the market." Dr. Adams is evidently unacquainted with Flemming's instrument, which takes high rank for reliability and accuracy. Though not technically "dead-beat," it is sufficiently so for practical purposes, and is in every way incomparably superior to the meter of Barrett.

VACATION TIME, WITH HINTS OF SUMMER LIVING. By H. S. DRAYTON, M.D. "The Science and Health Library." New York: Fowler & Wells Co., 1891.

IN a brochure of eighty-four pages, Dr. Drayton has succeeded in presenting in popular form a number of practical suggestions as to the best means of spending the summer season most advantageously.

Dr. Klaussner has been selected as the successor of Dr. Angerer as Professor Extraordinary of Surgery and as chief of the Surgical Polyclinic at the University of Munich.

CORRESPONDENCE.

BERLIN.

Latin Inscriptions — Obstetrical Cases — Gynecological Operations — Martin — Gusserow — Olshausen — Facilities for Instruction — Incentives for Work — Rupture of the Uterus — Axis-traction vs. Podalic Version — Lysol — Obstetrical Abandonment of Corrosive Sublimate — Details of an Abdominal Operation — Operation for Ectopic Gestation — Ungrateful Criticism — Martin's Clinic — His Dexterity.

ON the wall of a large building near that in which I am staying, there is a great sun-dial, having above it the inscription in large letters: *Horas non numero nisi serenas.* By the way, one very much more unexpectedly and frequently meets with Latin inscriptions in Europe than in the United States For example, one may read upon the door of an old stable in Reichenhall this probably very appropriate legend: *Cave canem.*

The seventeen days that I have spent in Berlin may be recorded as very bright days, so far as seeing some important cases in obstetrics and witnessing many gynecological operations are concerned. The latter include twenty-three laparotomies, in two of which the uterus was removed on account of myoma, two vaginal extirpations of the cancerous uterus, one operation each for vesico-vaginal fistula and for elephantiasis of the labia majora, and some sixty colporrhaphies, and operations upon the cervix and upon the perineum. The operators were Dr. Martin and Professors Olshausen and Gusserow.

Drs. Olshausen and Gusserow are professors in the University, and each has under his control for obstetric and gynecological cases, the former at the Charité and the latter at the Frauen Klinik, not less than one hundred and thirty beds; moreover, there is an external obstetrical service belonging to each, but under the immediate direction of their respective assistants. In all, more than four thousand cases of labor are available for the instruction of the medical students of the University of Berlin. Students may select the course of Gusserow or of Olshausen, and the division is about equal—each of these teachers has somewhat more than two hundred students. Professor Olshausen came here from Halle as the successor of the lamented Schröder, and being in charge of the Frauen Klinik (the buildings and appointments of which are recent and admirable, and include a residence) holds probably the most desirable public position in obstetrics and diseases of women in Germany. When I contrast the facilities for instruction here, the ample clinical material, the imperial position of teachers—no interference from ignorance, malevolence or covetousness—the great opportunity for work, and the incentive to the best work, with the condition of things in many American medical institutions, it brings a sorrow too great for words. My belief is that much greater facilities for clinical instruction, especially in obstetrics and gynecology, ought to be supplied in our great centers of medical teaching. To this end, both State and city appropriation of money ought to be made, first to those hospitals in which such instruction is given, and especially to the hospitals connected with medical schools; private institutions should be sustained by

private beneficence, or by their projectors, who established them mainly or solely for their personal advantage.

But to return: Professor Olshausen showed me two cases of rupture of the uterus, the accident in both women occurring outside of the hospital. In one case the cause was hydrocephalus in the fetus; and in the other, attempted version on account of a narrowed pelvis; delivery was effected after puncture and after craniotomy, neither patient being treated by abdominal section. One of the women was almost entirely well, and the other, and more recent case, promised prompt convalescence. These cases show the error of those who insist upon laparotomy as the rule in rupture of the uterus, berating obstetric writers for not accepting this dogma, and charging them with want of progress. It is to be regretted that there is so much dogmatism in medicine, so much disposition on the part of some in the profession to assert that "this, and this only, is the right way," and to disparage the ability, the work and the reputation of another. Individual professional experience is necessarily very limited—limited in extent and in duration—and absolute conclusions drawn from it are, therefore, liable to be erroneous. I am sorry for the physician who, as his years go on, does not grow more catholic in his opinions and become more charitable in his feelings, toward those of his own guild especially.

The axis-traction forceps is scarcely used by Berlin obstetricians, they asserting that podalic version is better suited in those cases for which the various forms of this instrument have been advised.

Lysol is being quite largely tried as an obstetric antiseptic, and Dr. Gusserow tells me that his assistants have found it satisfactory, though he has not used it himself. He further states that he has abandoned corrosive sublimate, because three of his patients perished from mercurial poisoning, an equal number dying from septic disease. The general obstetric mortality of the Charité is about one per cent., or a little less; this percentage is materially increased by women already sick being brought into the hospital.

A laparotomy (for cystoma of each ovary) was the last operation I witnessed in London before coming to Berlin; it was done at the Samaritan by Mr. Bantock, who declares microbes to be nothing but "bogies," and, of course, no antiseptics were used; but a greatly different faith and practice prevail in this city! You recognize this first when you go to one of Professor Olshausen's laparotomies, clad in a sleeveless white jacket, your own coat having been taken off; or to one of Dr. Martin's: having laid aside coat and vest, and passing through a cloud of carbolic acid spray in a hall at the entrance to the operating-room (a room used exclusively for abdominal section: an apparatus for sterilizing, by dry heat, the instruments employed is a part of the furniture of the room; possibly there is a second or third, in which the dressings are sterilized), you enter Dr. Martin's room, and it looks as if there had been a mist-like rain that had fallen upon the stone floor, and upon all the scanty furniture—everything is wet, even the walls seem afflicted with hydrorrhea. Walls and floor have been washed with a solution of sodium bicarbonate, and a powerful spray-apparatus has been diffusing carbolic acid through the rooms for hours the day before the operation. Operators and their assistants wear the linen gown, robe, shirt—whatever it is called—advised by Von Bergmann, and at the Charité I have also observed one or two of the nurses wearing a linen garment. The operator and his assistants are, of course, scrupulous in the use of hot water, soap, and brush—but Tait, Bantock, and Price, and a score of others I might name, are just as careful and thorough in the use of these means; then follows washing the hands in a corrosive sublimate solution.

The patient has the bowels and bladder emptied, has a bath, the pudendum is shaved, and she is taken to an adjacent room, where the anesthetic, always chloroform, is given; next the abdominal wall is washed with soap and hot water, scrubbed, indeed, until it blushes—if not from shame, at least from irritation; then follows a thorough washing with corrosive sublimate solution, after which the patient is carried into the operating-room —at Dr. Gusserow's clinic room she is brought in quite naked, so far as body clothing is concerned, with nothing but a sheet over her. Supposing Dr. Martin the operator, immediately after the patient is placed upon the table, the chief nurse, Frau Horn, makes a further cleansing of the abdomen, by rubbing it well with lemon-juice; then follows another washing with sublimate solution. I cannot forbear pausing for a moment to say a word about this remarkable woman. She has been in Dr. Martin's employ for eleven years, and she can anticipate the wants of the operator, almost apprehend his very thought, better than any assistant, male or female, I have ever seen; no matter what is needed at a particular moment —sponge, knife, needles, scissors, silk or catgut, forceps, what not, it is always at hand—she is alike quick in thought and in action. We have a popular expression for one who shows power and success of action: "He is a major;" I cannot call Frau Horn a major, but would rather select the superlative, and say she is an *optima;* no one who has seen her prompt and intelligent work at Dr. Martin's operations will doubt the justice of the name.

Those who have been accustomed to the short abdominal incision made by Mr. Tait, will be not a little astonished, at first, at least, at seeing the long incision so commonly made in Germany. The advantage of the latter is that the opportunity of seeing is so much greater —the operator has vision as well as touch. I think, too, that in making a long incision the discovery of the linea alba is more readily made; for I have certainly seen operators with considerable experience occasionally have delay and difficulty in finding this when making a short incision, while with the long one I have never seen Martin hesitate a second. Moreover, the sutures of the abdominal wound are more readily, possibly, too, more accurately placed if this be long than if it be short. Now, if one adds these incidental advantages to the primary one that has been mentioned, it must be admitted that much may be said in favor of the German method.

Two other points in which the work of the German operators whom I have seen differs from that of Mr. Tait and his followers: The abdomen was not washed out in a single instance, nor was a drainage-tube used, though the washing out seemed to me plainly indicated in one of Professor Gusserow's cases (a tubal gestation, with

rupture into the abdominal cavity, and considerable hemorrhage), and in two of Martin's cases (a rupture of a collection of pus during enucleation of the sacs, and some hemorrhage from tearing up adhesions). It occurred to me that not only washing out could have been wisely done, but also that a drainage-tube ought to have been employed. Yet all of these patients did well. Furthermore, in no case were silk ligatures used in the abdominal cavity—catgut always; even in a case of hysterectomy by Gusserow, and in one of complete removal of a large myomatous uterus by Martin, catgut was sufficient to secure perfect hemostasis; it should be remembered that these ligatures are used freely, three or four of them, for example, in tying the pedicle of an ovarian tumor.

From what I have seen of the work of other great operators, and from what I have seen here, I am more than ever convinced that there is more than one way to Rome—indeed, one might almost adopt a poet's line: "The ways they are many, the end it is one." The time for dogmatism has passed, and he who swears according to the method of this or that master may go widely astray, so far as justice is concerned; a true eclecticism is the wiser creed.

Among the very interesting operations performed by Professor Olshausen was one for ectopic gestation, in which the cyst had ruptured between the folds of the broad ligament, an extra-peritoneal hematocele had resulted, and suppuration had followed. Puncture of the hematocele through the vagina was first made at two points, and nothing but pure blood could be extracted by the aspirator; then an abdominal incision was made, not entering the peritoneal cavity, and a large quantity of sero-purulent and bloody fluid removed; drainage was accomplished by means of iodoform gauze. In this case the temperature, which had been elevated for some days, became normal, and when I saw her some days after the operation, her convalescence seemed assured.

It would be ungracious to make any criticism of these operations and of their methods, even if good occasion offered. He to whom the privilege of witnessing operations has been offered, would be deficient both in conscience and in courtesy did he in printed or uttered words condemn the operator who had kindly given the invitation. If the operation was wrong, he could be told so in private, and thus the endeavor be made to set him right, instead of the utterance of heedless and harsh words to others. But very often this professional critic has not the knowledge justifying his assumed rôle, and his speech may be far from silvern; it may be brazen; and his silence, above that of any other, would be golden. I know that Mr. Tait, for example, has had unjust charges made against him by men who have solicited, and have been granted, the opportunity of witnessing his operations, for I have heard them; even since I have been abroad this summer, an American physician made a statement in my presence as to Dr. Tait's want of cleanliness in abdominal operations, the former having recently seen Tait operate, that is so directly opposite to what I have myself seen that I discredit the assertion. But, even if it were true, the propriety of making it is doubtful, and beside, to receive a benefit and then attempt to injure the benefactor, does not exalt human nature.

While Professors Olshausen and Gusserow occupy important public positions, Dr. Martin has made his own position, has his own private hospital and dispensary, and gives instruction in obstetrics and diseases of women to graduates in medicine as a privat-docent. There is a daily attendance at the dispensary of from thirty to sixty patients, and the hospital, which has forty beds, always seems to be full. Probably the majority of his patients pay for their hospital accommodations, yet frequently some of them can pay but little, possibly some others nothing. His benevolence certainly must be greatly taxed. Of his ability as an operator it is not necessary to speak. He has a corps of able assistants, the first of whom is Dr. Mackenroth, who is associated with Martin in teaching, and to whom I am indebted for important acts of kindness. Though Dr. Martin is one of the most rapid of operators, he dictates to an assistant, who has tablet and pencil ready, brief statements of conditions revealed in the course of the operation. The following record made by one of his assistants tells the story of the rapidity of operating better than any general statement can:

(JULY 18, 1891.)

1. Frl. B., 22 years old. Tumor tubo-ovar. sin. Ovario-salp. sin. Punctio ovari. dextr. 6 min.
2. Frau K., 24 years old. Tumor tubo-ovar. dexter. Ovario-salp. dextr. 8 min.
3. Frau K., 30 years old. Tumor tubo-ovar. dexter. Salpingotom. dextr. 7 min.
4. Frl. B., 27 years old. Tumor tubo-ovar. sin. Ovario-salp. sin. Resectio ovar. dextr. 10 min.
5. Frau W., 26 years old. Tumor tubo-ovar. sin. Ovario-salp. sin. 6 min.
6. Frau S., 41 years old. Tumor tubo-ovar. dupl. Ovario-salp. dupl. 15 min.

All of these operations were accomplished and the patients were returned to their beds within two hours. Velpeau said that he credited the *vagitus uterinus* because reputable observers asserted that they had heard it, but if he heard it himself he would not believe it. So I would hardly trust my own observation as to the rapidity with which the work was accomplished—would be disposed to discredit my eyes and my watch—but I cannot doubt the statements of other observers.

I saw these patients on the fifth day subsequently, and they were all doing well. One might think that after such tax upon brain, and conscience, and hand, the operator would be very weary, and be imperatively in need of rest. But no; for Dr. Martin, after laying aside his operating attire—white flannel shirt and pantaloons and rubber apron—and resuming his usual attire, save a coat, immediately performed three plastic operations—vaginal, perineal, and uterine. A distinguished British statesman said of Daniel Webster that he was a steam-engine in breeches; and I think a similar statement might be made as to Martin.

I must not omit to mention that during the introduction of the suture for closing the abdominal wound Dr. Martin has a large flat sponge, which has been well covered with pure sweet oil, placed upon the omentum and intestines; he states that since following this plan subsequent adhesions to the abdominal wall do not occur.

The operating-rooms are small, especially that devoted to laparotomy, and, of course, the number who can witness an operation satisfactorily must be small. Those

who are fortunate enough to be invited represent many countries, and not Germany alone; I have at different times seen several from the United States, among them two prominent homeopathic practitioners from Boston, and one from Chicago, an Italian, Russians, Danes, Norwegians, and others, some of them men of great celebrity. There is danger of Martin being overrun by visitors. Indeed he tells me that he is frequently annoyed by persons whom he does not know. Possibly he may one day be compelled to institute a quarantine against visiting operators almost as strict as that which Mr. Tait is said to enforce.

Professor Olshausen usually operates at 7.30, sometimes at 7 A.M., Professor Gusserow at 8.30, and Dr. Martin at 12.

NEWS ITEMS.

Obituary.—The death is announced of DR. RICHARD LEA MACDONNELL, of Montreal, Professor of Clinical Medicine at McGill University, and Assistant Physician to the Grand Trunk Railway Company. He was the son of an eminent Irish surgeon of the same name, one of the pioneers of medical education in Canada.

Dr. MacDonnell succumbed to phthisis, at the age of thirty-eight. For his years, he had done a great deal of medical literary work. He is familiar to the readers of THE MEDICAL NEWS through valuable articles from his pen on syphilis, typhoid fever, cirrhosis, etc., that have appeared in our columns. He had taken his B.A. at McGill before he began his medical course. He had a well-stored mind, a pleasing manner, and a fine presence. His enthusiasm for scientific medicine continued to the last—at the time of his death he was engaged on an article on fevers for Pepper's forthcoming work. He leaves a widow, but no issue.

At a special meeting of the Montreal Medico-Chirurgical Society the following resolutions were unanimously adopted:

Resolved, That this society records, with the deepest regret, its sense of the loss which it has sustained in the death of Dr. Richard Lea MacDonnell, one of its most able and efficient members, who not only took part in its debates, but by valuable papers contributed from time to time, added not a little to the progress of medical science.

Resolved, That in the opinion of this Society Dr. MacDonnell's death, at a time when his usefulness was greatest, is a loss to the medical profession of Canada, in which he took a high place as a teacher and writer and earnest scientific investigator.

——— DR. THOMAS ANDERSON RODGER, a leading surgeon of Montreal, and Chief Medical Officer of the Grand Trunk Railway, died of septic pneumonia, August 6th, at the age of forty-four years. He had had large surgical experience in railway work, and was a man of most genial disposition. He began life as a pharmacist. He leaves a widow and one son.

By a curious coincidence, within a few days the great railway corporation loses its two principal medical officers.

An Army Medical Board will be in session in New York City, N. Y., during October, 1891, for the examination of candidates for appointment in the Medical Corps of the United States Army, to fill existing vacancies.

Persons desiring to present themselves for examination by the Board will make application to the Secretary of War, before September 15, 1891, for the necessary invitation, stating the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from which they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal knowledge, from at least two physicians of repute, as to professional standing, character and moral habits. The candidate must be between twenty-one and twenty-eight years of age, and a graduate from a regular medical college, as evidence of which his diploma must be submitted to the Board.

Further information regarding the examinations may be obtained by addressing the Surgeon-General U. S. Army, Washington, D. C.

C. SUTHERLAND,
Surgeon-General, U. S. Army.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 11 TO AUGUST 17, 1891.

BAILY, JOSEPH C., *Lieutenant-Colonel and Assistant Medical Purveyor.*—Granted one month's ordinary leave, in extension of sick-leave.

GRADY, CHARLES M., *Assistant Surgeon.*—Will, upon the final adjournment of the Army Medical Board, resume his leave of absence.

COCHRAN, JOHN J., *Assistant Surgeon.*—Died at St. Luke's Hospital, New York City, N. Y., August 5, 1891.

DE WITT, THEODORE F., *Assistant Surgeon.*—Granted sick-leave of absence for thirty days.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING AUGUST 15, 1891.

BAKER, J., *Passed Assistant Surgeon.*—Detached from U. S. S. "Palos," and authorized to delay reporting in the United States for six months.

SAYRE, J. S., *Passed Assistant Surgeon.*—Detached from the U. S. S. "Ranger," and ordered to the U. S. S. "Palos."

MEANS, V. C. B., *Passed Assistant Surgeon.*—Ordered to the New York Naval Hospital, September 1st.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FOR THE THREE WEEKS ENDING AUGUST 8, 1891.

PURVIANCE, GEORGE, *Surgeon.*—Detailed as Chairman of Board of Examiners, August 8, 1891.

SAWTELLE, H. W., *Surgeon.*—To proceed to Portland, Me., for special duty, August 3, 1891.

GODFREY, JOHN, *Surgeon.*—To represent the Service at the Seventh International Congress of Hygiene and Demography, July 25, 1891. Detailed as a member of Board of Examiners, August 8, 1891.

IRWIN, FAIRFAX, *Surgeon.*—Detailed as Recorder of Board of Examiners, August 8, 1891.

MEAD, F. W., *Surgeon.*—Granted leave of absence for thirty days, July 30, 1891.

CARTER, H. R., *Passed Assistant Surgeon.*—Granted leave of absence for thirty days, August 8, 1891.

CARMICHAEL, D. A., *Passed Assistant Surgeon.*—Granted leave of absence for thirty days, August 3, 1891.

PETTUS, W. J., *Passed Assistant Surgeon.*—To proceed to Wilmington, N. C., for temporary duty, July 31, 1891.

PERRY, J. C., *Assistant Surgeon.*—Granted leave of absence for twenty-seven days, July 28, 1891.